ORDER FOR SUPPLIES OR SERVICES

PAGE 1 OF 57

1. CONTRACT/PURCH. ORDER/ AGREEMENT NO.	2. DELIVERY ORDER/ CALL NO.	3. DATE OF ORDER/CALL (YYYYMMMDD)	4. REQ./ PURCH. REQUEST NO.	5. PRIORITY
N65540-15-D-0005	0001	2015 Mar 13	See Schedule	

6. ISSUED BY CODE N65540
NAVAL SURFACE WARFARE CENTER CARDEROCK
(b) (6)(b) (6)(b) (6)
5001 S. BROAD STREET
PHILADELPHIA PA 19112-5083

7. ADMINISTERED BY *(if other than 6)* CODE S5111A
DCMA HAMPTON
2000 ENTERPRISE PARKWAY
HAMPTON VA 23666

8. DELIVERY FOB
[X] DESTINATION
[ ] OTHER
(See Schedule if other)

9. CONTRACTOR CODE 07MU1 FACILITY
NAME AND ADDRESS
GENERAL DYNAMICS INFORMATION TECHNOLOGY,
[redacted]
3211 JERMANTOWN RD
FAIRFAX VA 22030-2844

10. DELIVER TO FOB POINT BY (Date) *(YYYYMMMDD)*
SEE SCHEDULE

11. MARK IF BUSINESS IS
[ ] SMALL
[ ] SMALL DISADVANTAGED
[ ] WOMEN-OWNED

12. DISCOUNT TERMS

13. MAIL INVOICES TO THE ADDRESS IN BLOCK
See Item 15

14. SHIP TO CODE N65540
NAVAL SURFACE WARFARE CENTER CARDEROCK
(b) (6)(b) (6)
NAVAL BUSINESS CENTER
1601 LANGLEY AVE, BLDG 542 E
PHILADELPHIA PA 19112-5051

15. PAYMENT WILL BE MADE BY CODE HQ0338
DFAS COLUMBUS CENTER,SOUTH ENTITLEMENT O
P.O. BOX 182264
COLUMBUS OH 43218-2264

MARK ALL PACKAGES AND PAPERS WITH IDENTIFICATION NUMBERS IN BLOCKS 1 AND 2.

16. TYPE OF ORDER			
	DELIVERY/ CALL	X	This delivery order/call is issued on another Government agency or in accordance with and subject to terms and conditions of above numbered contract.
	PURCHASE		Reference your quote dated Furnish the following on terms specified herein.REF:

ACCEPTANCE. THE CONTRACTOR HEREBY ACCEPTS THE OFFER REPRESENTED BY THE NUMBERED PURCHASE ORDER AS IT MAY PREVIOUSLY HAVE BEEN OR IS NOW MODIFIED, SUBJECT TO ALL OF THE TERMS AND CONDITIONS SET FORTH, AND AGREES TO PERFORM THE SAME.

NAME OF CONTRACTOR | SIGNATURE | TYPED NAME AND TITLE | DATE SIGNED *(YYYYMMMDD)*

[ ] If this box is marked, supplier must sign Acceptance and return the following number of copies:

17. ACCOUNTING AND APPROPRIATION DATA/ LOCAL USE
See Schedule

18. ITEM NO.	19. SCHEDULE OF SUPPLIES/ SERVICES	20. QUANTITY ORDERED/ ACCEPTED*	21. UNIT	22. UNIT PRICE	23. AMOUNT
	SEE SCHEDULE				

** If quantity accepted by the Government is same as quantity ordered, indicate by X. If different, enter actual quantity accepted below quantity ordered and encircle.*

24. UNITED STATES OF AMERICA
(b) (6)

(b) (6)
CONTRACTING / ORDERING OFFICER

25. TOTAL $7,318,279.08
26. DIFFERENCES

27a. QUANTITY IN COLUMN 20 HAS BEEN
[ ] INSPECTED [ ] RECEIVED [ ] ACCEPTED, AND CONFORMS TO THE CONTRACT EXCEPT AS NOTED

b. SIGNATURE OF AUTHORIZED GOVERNMENT REPRESENTATIVE | c. DATE *(YYYYMMMDD)* | d. PRINTED NAME AND TITLE OF AUTHORIZED GOVERNMENT REPRESENTATIVE

e. MAILING ADDRESS OF AUTHORIZED GOVERNMENT REPRESENTATIVE

f. TELEPHONE NUMBER | g. E-MAIL ADDRESS

28. SHIP NO. | **29. DO VOUCHER NO.** | **30. INITIALS**

[ ] PARTIAL [ ] FINAL

31. PAYMENT
[ ] COMPLETE [ ] PARTIAL [ ] FINAL

32. PAID BY

33. AMOUNT VERIFIED CORRECT FOR

34. CHECK NUMBER

35. BILL OF LADING NO.

36. I certify this account is correct and proper for payment.
a. DATE *(YYYYMMMDD)* | b. SIGNATURE AND TITLE OF CERTIFYING OFFICER

37. RECEIVED AT	38. RECEIVED BY	39. DATE RECEIVED *(YYYYMMMDD)*	40. TOTAL CONTAINERS	41. S/R ACCOUNT NO.	42. S/R VOUCHER NO.

Section B - Supplies or Services and Prices

FOIA Exemption B4 Contractor Proprietary and Private

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001			Lot		[redacted]

Engineering and Technical Services

CPFF

in support of the Navy Modernization Programs of Hull Material and Electronics (HM&E) systems from date of award through 12 months. Technical services are further described in the Statement of Work.

FOB: Destination

ESTIMATED COST	[redacted]
FIXED FEE	
TOTAL EST COST + FEE	

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
000101			Lot		[redacted]

Funding for CLIN 0001
CPFF
FOB: Destination
PURCHASE REQUEST NUMBER: 1300479900

ESTIMATED COST

FIXED FEE

TOTAL EST COST + FEE

[redacted]

ACRN AA

CIN: 130047990000001

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
000102			Lot		[redacted]

Funding for CLIN 0001

CPFF

10 U.S.C. 2410(a) is hereby invoked. Funding available for performance through 03/13/2016.

FOB: Destination

PURCHASE REQUEST NUMBER: 1300481773

ESTIMATED COST

FIXED FEE

TOTAL EST COST + FEE

[redacted]

ACRN AB

CIN: 130048177300001

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0004			Lot		[redacted]

Support Costs

COST

includes material, travel, incidential subcontracting and other direct costs in support of Items 0001 through 0003 in accordance with the Statement of Work. The estimated costs that will be incurred over the three-year period of the contract is [redacted] This cost is a Not-To-Exceed amount.

FOB: Destination

ESTIMATED COST [redacted]

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
000401			Lot		[redacted]

Funding for CLIN 0004 Support Costs

COST

10 U.S.C. 2410(a) is hereby invoked. Funding available for performance through 03/13/2016.

FOB: Destination

PURCHASE REQUEST NUMBER: 1300481773

ESTIMATED COST [redacted]

ACRN AB

CIN: 130048177300002

FOIA Exemption B4 Contractor Proprietary and Private

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
000402			Lot		[redacted]

Funding for CLIN 0004 Support Costs
COST
FOB: Destination
PURCHASE REQUEST NUMBER: 1300479900

ESTIMATED COST [redacted]

ACRN AA

CIN: 130047990000002

Section C - Descriptions and Specifications

STATEMENT OF WORK
USS JOHN S MCCAIN (DDG-56) HM&E CORE ALTS
USS MITSCHER (DDG-57) & USS MILIUS (DDG-69) C-DR SYSTEM
SCALABLE INTEGRATED BRIDGE SYSTEM (S-IBS) INSTALL & VMS SOFTWARE
CG47 AND DDG51 CLASS HM&E MACHINERY SYSTEM GROOM

INTRODUCTION

This Delivery Order will task the AIT contractor to accomplish several tasks in support of Naval Surface Warfare Center, Ships System Engineering Station (NAVSSES) Philadelphia Code 917. These Modernization Program tasks include:

(a) HM&E Core Alterations on USS JOHN S MCCAIN (DDG-56)
(b) Interior Communications Circuit C-DR system groom, install and repair on USS MITSCHER (DDG-57) and USS MILIUS (DDG-69)
(c) Scalable Integrated Bridge System hardware/software on (1) LSD-41 Class ship
(d) CG47Class ship for Groom and Assessment of HM&E Integrated Ship Control (ISC) system and equipment on (1) ship.

The individual task scope, references and requirements are detailed separately in this document.

Estimated Level of Effort:

[redacted]

Task #1: USS JOHN S MCCAIN (DDG-56) HM&E MACHINERY CORE ALTS – COPPER AND FIBER OPTIC CABLE TERMINATION AND TESTING

BACKGROUND

NAVSEA-21, in support of the US Navy's DDG Modernization Backfit Program, requires the installation of SCD 71604K "Machinery Controls System (MCS)/Damage Controls System (DCS) Upgrade", SCD 73088K "Gigabit Ethernet Data Multiplex System (GEDMS)", SCD 71726K "Full Integrated Bridge Navigation System (IBNS) Upgrade", SCD 70403K "Digital Fuel Control System", SCD 76253K "Lube Oil Coalescing Filter", SCD 77427 "Digital Indicators", and SCD 77829 "RADAR and TDR TLIS for DFM, JP-5 and Potable Water" onboard USS JOHN S. MCCAIN (DDG 56) during the FY15 EDSRA (March 25, 2015 through December 16, 2015) in Ships Repair Facility (SRF) Yokosuka, Japan.

1.0 SCOPE:

1.1 Accomplish copper electrical cable connector, fiber optic cable connector and hardwire hookup modifications, terminations and associated testing for SCD 71604K "Machinery Controls System (MCS)/Damage Controls System (DCS) Upgrade", SCD 730884K "Gigabit Ethernet Data Multiplex System (GEDMS)", SCD 71726K "Full Integrated Bridge Navigation System (IBNS) Upgrade", SCD 70403K "Digital Fuel Control System", SCD 76253K "Lube Oil Coalescing Filter", SCD 77427 "Digital Indicators", and SCD 77829 "RADAR and TDR TLIS for DFM, JP-5 and Potable Water" onboard USS JOHN S. MCCAIN (DDG 56).

1.2 Location of Work will be throughout the ship.

1.3 Identification: Not Applicable

1.4 Security Classification of Equipment, Components, Spaces and Documents: The Equipment, Space or Document is classified and subject to the applicable provisions of the National Industrial Security Program Operating Manual, DOD 5220.22-M (0584-LP-179-6400).

1.4.1 Spaces: (C) Confidential, (S) Secret

1.4.1.1 Combat Information Center (1-126-0-C) (C)
1.4.1.2 Central Control Station and DC Central (1-268-0-C) (C)
1.4.1.3 Combat Systems Maintenance Control and Repair 8 (01−130−0−C) (C)
1.4.1.4 Combat Systems Equipment Room No. 1 (2−53−1−C) (C)
1.4.1.5 Combat Systems Equipment Room No. 2 (2−126−2−C) (C)
1.4.1.6 Combat Systems Equipment Room No. 3 (1−300−0−C) (C)
1.4.1.7 Communication Center (2−126−1−C) (S)

1.4.1.8 IC and Gyro Room No. 1 (4–94–0–C) (C)
1.4.1.9 IC and Gyro Room No. 2 (3–300–0–C) (C)
1.4.1.10 Sonar Equipment Rm 3 (3-018-0-Q) (C)
1.4.1.11 Security Forces Issue Room (1-054-1-Q) (C)

2.0 REFERENCES:

2.1 NAVSEA FY15 Standard Items http://www.supship.navy.mil/ssrac4/standard.htm
2.2 SRF-JRMC FY15 Local Standard Items
2.3 302 – 8591486 REV A DDGM MCS/DCS Upgrd Install Potw Automn Elec Mods & Ml
2.4 324 – 8591529 REV A DDGM MCS/DCS Upgrd Thermal Monitoring CNSLD Elec DWG & ML
2.5 436 – 8591498 REV A DDGM MCS/DCS Upgrd Fire Det Sys Itb CNSLD ELEC MODS & ML2.16
2.6 431 – 8591481 REV A DDGM MCS/DCS Upgrd Auto Heat Stress Sys CNSLD ELEC DWG & ML
2.7 431 – 8591482 REV A DDGM MCS/DCS Upgrd Auto Heat Stress Sys WCL
2.8 300 – 8591461 REV A DDGM MCS/DCS Upgrd UCC, RSC & DIU CNSLD ELEC DWG & ML
2.9 300 – 8591462 REV A DDGM MCS/DCS Upgrd UCC, RSC, & DIU WCL
2.10 321 – 8591562 Rev A HM&E MOD IDD Cable Routing & ML
2.11 321 – 8591563 Rev A HM&E MOD IDD Cable Routing, MN Cableway Checkpoint Location
2.12 RLAR, 71604/DDG54/1141420, Jay Heaney Walkthrough required Modification to AHSS Units
2.13 RLAR, 71604/DDG56/1142334, Make Dual & Single USIM Enclosures & Components 'HSC'
2.14 RLAR, 71604/DDG56/1142471, MRG Valve Labeling Incorrect, MER 1 (4-174-0-E) MER 2 (4-254-0-E)
2.15 RLAR, 71604/DDG56/1143585, Add Hook-Up to Dwg for pre-Plug Effort
2.16 RLAR, 71604/DDG56/1143369, Relocate outboard legs EC 2B Fnd 3" Inbd in Port Aft cor MER 2
2.17 RLAR, 71604/DDG56/1143262, DIU Foundations Interfere with Connectors
2.18 431–8591402 Rev A, ShipAlt DDG51–73088 GEDMS AN/USQ–82(V), Cnsld Elec Dwg & ML
2.19 431–8591404 Rev A, ShipAlt DDG51–73088 GEDMS Backbone and Node Interconnecting Cable Routing Plan
2.20 431–8591403 Rev A, ShipAlt DDG51–73088 GEDMS AN/USQ–82 (V), List of Connections
2.21 321–8591562 Rev A, HM&E Mod IDD Cable Routing & ML
2.22 321–8591563 Rev A, HM&E Mod IDD Cable Routing, MN Cableway Checkpoint Location
2.23 RLAR 73088/DDG54/1142432, New GEDMS C-DR Boxes are missing Jumper/EBR info
2.24 RLAR 73088/DDG56/1141165, Revise detail for install of USE 72A Fdn
2.25 RLAR 73088/DDG56/1141563, Revise cat no. for power star ups from 34057-052 to 34057-028 (without batteries) and buy batteries separately
2.26 RLAR 73088/DDG56/1142664, C-DR118 has wrong TB location for pair 18

2.27 RLAR 73088/DDG56/1143099, Revise Cable C-LN108 (W4148) to reflect new location of NTDS-E card
2.28 428−8591446 Rev A, ShipAlt DDG51−71726, DDGM Full IBS Upgrd List of Connections
2.29 428−8591445 Rev A, ShipAlt DDG51−71726, DDGM Full IBS Upgrd Cnsld Elec Dwg & ML
2.30 321−8591562 Rev A, HM&E Mod IDD Cable Routing & ML
2.31 321−8591563 Rev A, HM&E Mod IDD Cable Routing, MN Cableway Checkpoint Location
2.32 RLAR 71726/DDG56/1141799, Fix RPM Label Plate
2.33 RLAR 71726/DDG56/1142431, Cable R-EN-2668A identified as R-EN- 2658
2.34 RLAR 71726/DDG56/1142552, Revise backshell to fit cable type
2.35 RLAR 71726/DDG56/1142822, Multi Source Power labels incorrect for IBNS
2.36 438−8591465 Rev A, SHIPALT DDG−51−70403 Fuel Control System CNSLD Electrical DWG & ML
2.37 438−8591466 Rev A, SHIPALT DDG−51−70403 Fuel Control System WCL
2.38 321−8591562 Rev A, HM&E Mod IDD Cable Routing & ML
2.39 321−8591563 Rev A, HM&E Mod IDD Cable Routing, MN Cableway Checkpoint Location
2.40 RLAR 70403/DDG56/1142031, Delete Backshells and Connectors
2.41 RLAR 70403/DDG56/1142410, Backshell missing from WCL
2.42 302−8591472 Rev A, ShipAlt DDG−51−76253K, Install LO Coalescing Filters CNSLD Elec Mods, WCL and ML
2.43 437-8591441 Rev A, DIGITAL INDICATORS ELECTRICAL DRAWING & ML
2.44 437-8591442 Rev A, DIGITAL INDICATORS WIRE CONNECTION LIST
2.45 437-8591489 Rev A, INSTALL TANK SENSORS (RADAR/TDR) ELECTRICAL MODS & ML
2.46 437-8591490 Rev A, INSTALL TANK SENSORS (RADAR/TDR) ELECTRICAL WCL - one hardcopy
2.47 MIL-STD-2003, Department of Defense Standard Practice Electric Plant Installation Standard Methods (EPISM) for Surface Ships and Submarines
2.48 8100-3513-0060 Rev AD, Standard Methods for Mounting Elec Equip under 75 LBs
2.49 436-8418029 Rev A, Continuous Thermal Monitoring (CTM) System Block Diagram & CTM-Switchgear Interface Control Drawing for DDG-51 Class Modernization Backfit
2.50 (10001) OD32382 Rev F, Grounding and Bonding Equipment Enclosures, Chassis and Cases Design and Installation
2.51 MIL-STD-1310, Department of Defense Standard Practice Shipboard Bonding, Grounding, and Other Techniques for Electromagnetic Compatibility, Electromagnetic Pulse (EMP) Mitigation, and Safety
2.52 605-2540769 Rev D, Label Plate Standards
2.53 320-6598270 Rev H, One Line Diagram Power System 60 HZ
2.54 MCS Fuse List and Quantity, Rev B
2.55 DDG−56 Legacy Wiring Discrepancies
2.56 TEST PROCEDURE 3B202C020 DIU, EC & GTM Ground Checks for Connectors with Shrink Boot or Metal Backshells
2.57 8100−2774−0064, Modular Gage Boards
2.58 8100−2400−0013 Rev K, Penetration Water Shield for Non−Tight Flats
2.59 8100−1281−0223, Access Panels
2.60 USS JOHN S. MCCAIN (DDG−56) DMS Interface

2.61 302−8418030, No 1 and No 2 Motor Controllers Wiring Modification for Potable Water Control System
2.62 C-DR Box Cable Installation and Connection Responsibility Matrix Spreadsheet
2.63 NAVSSES−SSES 957, DDGM BF ITB, Wiring Harness Installation Guidance Rev -
2.64 NAVSSES−SSES 957, Cable Prep Guidance Rev B
2.65 NAVSSES-SSES 957, Shipboard RSC UPS, Battery Installation Procedure
2.66 NAVSSES-SSES 957, UCC Battery Installation Procedure Rev -
2.67 NAVSSES-SSES 957, DIU EC Battery Installation Procedure Rev -
2.68 NAVSSES-SSES 957, Uncrating Procedure for DIU's 4 & 5
2.69 DDG Mod Critical Path Equipment, Cable System to ISEA and Test Requirement Turnover Schedule for DDG−56 John S. McCain SCDs: 71726, 71604, 73088, 71615, 71605, 77259, 77427, 70403, 76974, 77829, 71734 and 70438
2.70 Prefabricated Cable List for DDG56
2.71 NAVSEA 9090-310F SHIPALT by Alteration Installation Team
2.72 NAVSSES Installation 4720.2F Process and Policy for Shipboard Industrial Work
2.73 4720−DDG56/FY15, Ship Alteration Material Summary (4720/3)
2.74 TP2A431C001 Rev A, DDG Modernization GEDMS CAT5E Bandwidth Test
2.75 TP3A31C004, Fiber Optic length Verification

3.0 REQUIREMENTS:

3.1 SCD 71604K "Machinery Controls System (MCS)/Damage Controls System (DCS) Upgrade" Requirements are as follows:

3.1.1 Accomplish the requirements of 2.3 through 2.17 for copper and fiber optic cable terminations to include: hardwire hookup (connection/junction boxes, equipment, power panels, transformers, switches, sensors & SWBDs), connector manufacture and testing of all new and modified electrical installations, using 2.1, 2.2 and 2.47 through 2.75 for guidance; ensuring all special notes are complied with. Reference 2.70 provides a detailed list of the prefabricated copper and fiber optic cable assemblies that will be provided as GFM. These prefabricated connectors will be installed on both local (intra space) and foreign (inter space) run cables. The contractor shall not include the cost to manufacture these connectors in their estimate.

3.1.1.1 The contractor shall perform the wiring corrections identified within 2.55 and provide material. These wiring corrections shall be completed prior to Equipment Turnover Four (4) of 2.69.

3.1.1.2 The contractor shall procure the material identified in 2.54. All unused or excess material from 2.54 shall be turned over to NAVSSES Code 957 or their representative at the completion of Equipment Testing of 2.69. *Fuses are for testing team and will be used as needed until end of sea trials.

3.1.1.3 Inventory, tag, and identify all materials required for connectorization to ensure all required connectors are on site. Submit one legible copy, in hard copy

or approved transferrable media, of a report listing results to the Hull Manager, OSTR and NSA within two weeks after the start of the availability.

3.1.1.4 Accomplish the requirements of 2.65 for all RSC Consoles prior to installation onto the ship.

3.1.1.5 Accomplish the requirements of 2.56. All wiring between the DIU connector and the end device shall be completed IAW dates listed in 2.69. If shrink backshells are utilized, cables should be connectorized and pinned but overshield and backshell must NOT be installed until this procedure has been completed satisfactorily. This procedure is accomplished with ISEA test team oversight. Accomplish all switchboard connectorization IAW dates listed in 2.69 for DIUs 1, 2, and 3. Switchboard connectorization is accomplished with NSWC-Philly OSIC test team oversight. For references 2.3 through 2.9, on turnover dates listed in 2.69, all power/signal connectors to the end user equipment (DIUs) will be left disconnected from the end user until instructed by ISEA test team. All Ethernet cables shall be connected to the user equipment and User Switch Enclosure (USE) in order to verify correct clocking of backshell. Submit one legible copy, in hard copy or approved transferrable media, of a report listing results of the requirements of this Paragraph to the Hull Manager, OSTR and NSA.

3.1.1.6 Electrical installations shall be IAW refs 2.47 and 2.51.

a) Electrical equipment up to 75 pounds shall be installed IAW refs 2.48.

3.1.1.7 DDGM BF MCS equipment, FCS, and Digital indicators are designed as floating systems. As such, inadvertent grounding of that equipment through cable over shields shorting to the backshell or terminating boxes introduces issue preventing the safe and effective use of that equipment. The installer shall practice proper cable insulation techniques such as those described in reference 2.64. When following the techniques such as those described in 2.47 the electrician shall practice the preferred methods where applicable. The contractor shall install heat shrink solder sleeves with attached grounding wires on all Triad Shield utilizing the methods detail in reference 2.64.

3.1.1.8 Fabricate and install label plates IAW references 2.3 through 2.7, using 2.52 for guidance. NAVSSES AIT shall assist the MSR in identifying the equipment and installation of the Label Plates.

3.1.2 All work within the C–DR boxes detailed in 2.3 through 2.17, including disconnecting existing wires/cables and making new electrical hook–ups shall be accomplished by the NAVSSES AIT electricians. The NAVSSES AIT shall include the cost of these efforts in their estimate.

3.1.3 The Prime Contractor MSR will accomplish all cable removal, installation, rerouting, banding (Except for the last two bands at the equipment, which will be installed by the NAVSSES AIT), labeling and packing transit windows to

support the electrical/cableway modifications detailed in 2.3 through 2.17. The NAVSSES AIT shall not include the cost of these efforts in their estimate.

3.1.4 The Prime Contractor MSR will accomplish all structural work and welding required to support the electrical/cableway modifications detailed in 2.3 through 2.17 that will include but not be limited to: installation of MCTs, collars, stuffing tubes, and cableway support brackets. The NAVSSES AIT shall not include the cost of these efforts in their estimate.

3.1.5 The Prime Contractor MSR will accomplish all structural, welding, mechanical, piping, painting, heavy metal abatement, insulation, rigging, to support the installation/modifications detailed in 2.3 through 2.17. The NAVSSES AIT shall not include the cost of these efforts in their estimate.

(V)(G) "SMOKE DETECTORS TEST"

3.1.6 Accomplish the requirements of Smoke Detectors IAW Test Note T2 of 2.5.

(V)(G) "HEAT DETECTORS TEST"

3.1.7 Accomplish the requirements for Heat Detectors IAW Test Note T3 of 2.5.

(V)(G) "SYSTEM OPERATIONAL TEST"

3.1.8 Accomplish the requirements of SOVT IAW
Test Note S2 of 2.6. The Prime Contractor MSR will accomplish this test. The NAVSSES AIT shall not include the cost of this effort in their estimate.

(V)(G) "CIRCUIT BREAKER TEST"

3.1.9 Accomplish the requirements of Circuit Breakers IAW Test Note T2 of 2.8.

(V)(G) "SYSTEM OPERATIONAL VERIFICATION TEST"

3.1.10 Accomplish the requirements of SOVT IAW Test Note T3 of 2.8. The Prime Contractor MSR will accomplish this test. The NAVSSES AIT shall not include the cost of this effort in their estimate.

(V)(G) "GROUNDED RECEPTACLES TEST"

3.1.11 Accomplish requirements of Grounded Receptacles IAW Test Note T4 of 2.8.

(V)(G) "OPERATIONAL TEST"

3.1.12 Accomplish the requirements of AC Power Disconnect Switch IAW Test Note T5 of 2.8.

(V)(G) "OPERATIONAL TEST"

3.1.13 Accomplish the requirements for the 60HZ, 1PH Isolation transformers IAW Test Note T6 of 2.8.

3.1.14 Using reference 2.63 as guidance, rewire the Integrated Terminal Board (ITB) wiring harnesses.

3.1.15 When directed by the Hull Manager or OSTR, the NAVSSES AIT shall utilize reference 2.66 to accomplish installation of the new batteries into the UCC Consoles prior to installation of the consoles onto the ship.

3.1.16 When directed by the Hull Manager or OSTR, the NAVSSES AIT shall utilize reference 2.67 to accomplish installation of the new batteries into the DIU and EC Consoles prior to installation of the consoles onto the ship.

3.1.17 All Production requirements for the installation of this SHIPALT shall be coordinated and accomplished to meet the scheduled dates of 2.69 Turnover of this equipment shall include its associated ancillary equipment and signal/fiber/power cabling.

3.2 SCD 73088K "Gigabit Ethernet Data Multiplex System (GEDMS)" Requirements are as follows:

3.2.1 Accomplish the requirements of 2.18 through 2.27 for copper and fiber optic cable terminations to include: hardwire hookup (connection/junction boxes, equipment, power panels, transformers, switches, sensors & SWBDs), connector manufacture and testing of all new and modified electrical installations, using 2.1, 2.2, and 2.47 through 2.76 for guidance. Ensuring all special notes are complied with. Reference 2.70 provides a detailed list of the prefabricated copper and fiber optic cable assemblies that will be provided as GFM. These prefabricated connectors will be installed on both local (intra space) and foreign (inter space) run cables. The NAVSSES AIT shall not include the cost to manufacture these connectors in their estimate.

3.2.1.1 Inventory, tag, and identify all materials required for connectorization to ensure all required connectors are on site. Submit one legible copy in hard copy or electronic media of report listing result to the Supervisor within two weeks after the start of the availability.

3.2.1.2 Electrical equipment up to 75 LBS shall be installed by the NAVSSES-SSES AIT IAW 2.48.

3.2.1.3 Bond and ground equipment IAW 2.50 and 2.51. Grounding straps shall be CRES 316L for topside equipment.

3.2.1.4 Contractor shall conduct test procedure listed in 2.74 and 2.75 in compliance with dates in 2.69.

a) Submit one legible copy, in hard copy or approved transferrable media, of a report listing results of the requirements of 3.2.1.4 to the Hull Manager, Onsite Tech Rep (OSTR) and Naval Supervising Activity (NSA).

(V)(G) "OPERATIONAL TEST"

3.2.2 Accomplish the requirements of Operational Test for Circuit Breaker IAW Test Note T2 of 2.18.

(V)(G) "FIBER OPTIC TEST"

3.2.3 Accomplish the requirements of Operational Test of Fiber Optic Cable IAW 2.75 and Test Note T3 of 2.18. Submit the results to the Hull Manager or OSTR for review and acceptance by NAVSSES Code 964. The Prime Contractor MSR has full Quality Assurance responsibility to provide the required QA documentation to the Hull Manager, Onsite Tech Rep (OSTR)for all fiber pulled, once fiber is pulled and proper QA documentation is provided the NAVSSES AIT shall be required to provide all remaining QA documentation.

(V)(G) "OPERATIONAL TEST"

3.2.4 Accomplish the requirements of Operational test for cutout switches and their associated equipment IAW Test Note T4 of 2.18.

(V)(G) "OPERATIONAL TEST"

3.2.5 Accomplish the requirements of SOVT IAW Test Note T5 of 2.18. The Prime Contractor MSR will accomplish this test. The NAVSSES AIT shall not include the cost of this effort in their estimate.

3.2.6 Fabricate and install new label plates IAW 2.2 and 2.18 through 2.19, using 2.52 for guidance. NAVSSES AIT shall assist the MSR in identifying the equipment and installation of the Label Plates.

3.2.7 All work within the C–DR boxes detailed in 2.18 through 2.27, including disconnecting existing wires/cables and making new electrical hook–ups shall be accomplished by the NAVSSES AIT electricians. The NAVSSES AIT shall include the cost of these efforts in their estimate.

3.2.8 The Prime Contractor MSR will accomplish all cable removal, installation, rerouting, banding (Except for the last two bands at the equipment, which will be installed by the NAVSSES AIT), labeling and packing transit windows to support the electrical/cableway modifications detailed in 2.18 through 2.27. The NAVSSES AIT shall not include the cost of these efforts in their estimate.

3.2.9 The Prime Contractor MSR will accomplish all structural work and welding required to support the electrical/cableway modifications detailed in 2.18 through 2.27 that will include but not be limited to: installation of MCTs, collars, stuffing tubes, and cableway support brackets. The NAVSSES AIT shall not include the cost of these efforts in their estimate.

3.2.10 The Prime Contractor MSR will accomplish all structural, welding, mechanical, piping, painting, heavy metal abatement, insulation, rigging, to support the installation/modifications detailed in 2.18 through 2.27. The NAVSSES AIT shall not include the cost of these efforts in their estimate.

3.3 SCD 71726K "Full Integrated Bridge Navigation System (IBNS) Upgrade, Single Bridge Watchstander" Requirements are as follows:

3.3.1 Accomplish the requirements of 2.28 through 2.35 for copper and fiber optic cable terminations to include: hardwire hookup (connection/junction boxes, equipment, power panels, transformers, switches, sensors & SWBDs), connector manufacture and testing of all new and modified electrical installations, using 2.1, 2.2 and 2.47 through 2.76 for guidance. Ensure all special notes are complied with. Reference 2.70 provides a detailed list of the prefabricated copper and fiber optic cable assemblies that will be provided as GFM. These prefabricated connectors will be installed on both local (intra space) and foreign (inter space) run cables. The contractor shall not include the cost to manufacture these connectors in their estimate.

3.3.1.1 Inventory, tag, and identify all materials required for connectorization to ensure all required connectors are on site. Submit one legible copy in hard copy or electronic media of report listing result to the Supervisor within two weeks after the start of the availability.

3.3.1.2 Electrical equipment up to 75 LBS shall be installed by AIT IAW 2.48.

3.3.1.3 Bond and ground equipment IAW 2.50 and 2.51. Grounding straps shall be CRES 316L for topside equipment.

3.3.1.4 Contractor shall conduct test procedure listed in 2.74 and 2.75 in compliance with dates in 2.69.

a) Submit one legible copy, in hard copy or approved transferrable media, of a report listing results of the requirements of 3.3.1.4 to the Hull Manager, OSIC and Naval Supervising Activity (NSA).

(V)(G) "OPERATIONAL TEST"

3.3.2 Accomplish the requirements of Operational Test for Circuit Breaker IAW Test Note T2 of 2.29.

(V)(G) "MANUAL BUS TRANSFER"

3.3.3 Accomplish the requirements of Operational test of Manual Bus Transfer Switching IAW Test Note T3 of 2.29.

(V)(G) "OPERATIONAL TEST"

3.3.4 Accomplish the requirements of Operational test for 120V Ground Receptacles IAW Test Note T4 of 2.29.

(V)(G) "FIBER OPTIC TEST"

3.3.5 Accomplish the requirements of Operational Test of Fiber Optic Cable IAW 2.75 and Test Note T5 of 2.29. Submit the results to the Hull Manager or OSTR for review and acceptance by NAVSSES Code 964. The Prime Contractor MSR has full Quality Assurance responsibility to provide the required QA documentation to the Hull Manager, Onsite Tech Rep (OSTR) for all fiber pulled, once fiber is pulled and proper QA documentation is provided the NAVSSES AIT shall be required to provide all remaining QA documentation.

(V)(G) "OPERATIONAL TEST"

3.3.6 Accomplish the requirements of 60HZ, 1PH Isolation Transformer IAW Test Note T6 of 2.29.

(V)(G) "SYSTEM OPERATIONAL TEST"

3.3.7 Accomplish the requirements of SOVT IAW Test Note T7 of 2.29. The Prime Contractor MSR will accomplish this test. The NAVSSES AIT shall not include the cost of this effort in their estimate.

(V)(G)"POWER CUTOUT SWITCHES"

3.3.8 Accomplish the requirements of Power Cutout Switches IAW Test Note T8 of 2.29.

(V)(G)"OPERATIONAL TEST"

3.3.9 Accomplish the requirements of Alarms Impacted IAW Test Note T9 of 2.29.

(V)(G)"OPERATIONAL TEST"

3.3.10 Accomplish the requirements of Step Down Transformers IAW Test Note T10 of 2.29.

3.3.11 Fabricate and install new label plates IAW 2.28 through 2.29, using 2.52 for guidance. NAVSSES AIT shall assist the MSR in identifying the equipment and installation of the Label Plates.

3.3.12 All work within the C–DR boxes detailed in 2.28 through 2.35, including disconnecting existing wires/cables and making new electrical hook–ups shall be accomplished by the NAVSSES AIT electricians. The NAVSSES AIT shall include the cost of these efforts in their estimate.

3.3.13 The Prime Contractor MSR will accomplish all cable removal, installation, rerouting, banding (Except for the last two bands at the equipment, which will be installed by the NAVSSES AIT), labeling and packing transit windows to support the electrical/cableway modifications detailed in 2.28 through 2.35. The NAVSSES AIT shall not include the cost of these efforts in their estimate.

3.3.14 The Prime Contractor MSR will accomplish all structural work and welding required to support the electrical/cableway modifications detailed in 2.28 through 2.35 and 2.48 that will include but not be limited to: installation of MCTs, collars, stuffing tubes, cableway support brackets and studs and angle to support equipment foundation under 75lbs. The NAVSSES AIT shall not include the cost of these efforts in their estimate.

3.3.15 The Prime Contractor MSR will accomplish all structural, welding, mechanical, piping, painting, heavy metal abatement, insulation, rigging, to support the installation/modifications detailed in 2.28 through 2.35. The NAVSSES AIT shall not include the cost of these efforts in their estimate.

3.4 SCD 70403K "Digital Fuel Control System" Requirements are as follows:

3.4.1 Accomplish the requirements of 2.36 through 2.41 for copper cable terminations to include: hardwire hookup (connection/junction boxes, equipment, power panels, transformers, switches, sensors & SWBDs), connector manufacture and testing of all new and modified electrical installations, using 2.1, 2.2 and 2.47 through 2.76 for guidance. Reference 2.70 provides a detailed list of the prefabricated copper and fiber optic cable assemblies that will be provided as GFM. These prefabricated connectors will be installed on both local (intra space) and foreign (inter space) run cables. The contractor shall not include the cost to manufacture these connectors in their estimate.

3.4.1.1 Electrical installations shall be IAW 2.47 and 2.51.

3.4.1.2 Electrical equipment up to 75 LBS shall be installed by the NAVSSES AIT IAW 2.48.

3.4.1.3 Ensure that cable length is sufficient to connect to the equipment plus additional cable length equal to the height and width of the equipment.

3.4.1.4 Fabricate and install label plates IAW references 2.36 through 2.41, using 2.52 for guidance. The NAVSSES AIT shall assist the MSR in identifying the equipment and installation of the Label Plates.

3.4.2 All work within the C–DR boxes detailed in 2.36 through 2.41, including disconnecting existing wires/cables and making new electrical hook–ups shall be accomplished by the NAVSSES AIT electricians. The NAVSSES AIT shall include the cost of these efforts in their estimate.

3.4.3 The Prime Contractor MSR will accomplish all cable removal, installation, rerouting, banding (Except for the last two bands at the equipment, which will be installed by the NAVSSES AIT), labeling (Cable Tags) and packing transit windows to support the electrical/cableway modifications detailed in 2.36 through 2.41. The NAVSSES AIT shall not include the cost of these efforts in their estimate.

3.4.4 The Prime Contractor MSR will accomplish all structural work and welding required to support the electrical/cableway modifications detailed in 2.36 through 2.41 that will include but not be limited to: installation of MCTs, collars, stuffing tubes, and cableway support brackets. The NAVSSES AIT shall not include the cost of these efforts in their estimate.

3.4.5 The Prime Contractor MSR will accomplish all structural, welding, mechanical, piping, painting, heavy metal abatement, insulation, rigging, to support the installation/modifications detailed in 2.36 through 2.41. The NAVSSES AIT shall not include the cost of these efforts in their estimate.

(V)(G)"OPERATIONAL TEST"

3.4.6 Accomplish the requirements of Circuit Breaker Test IAW Test Note T2 of 3.36.

(V)(G)"OPERATIONAL TEST"

3.4.7 Accomplish the requirements of Overflow Tank Level Switches IAW Test Note T4 of 3.36.

(V)(G)"OPERATIONAL TEST"

3.4.8 Accomplish the requirements of AC Power Disconnect Switch IAW Test Note T5 of 3.36.

(V)(G)"OPERATIONAL TEST"

3.4.9 Accomplish the requirements of Ultra Sonic Flowmeters IAW Test Note T6 of 3.36.

(V)(G)"OPERATIONAL TEST"

3.4.10 Accomplish the requirements of Fuel Fill Valves IAW Test Note T7 of 3.36.

3.5 SCD 76253K "Lube Oil Coalescing Filter" Requirements are as follows:

3.4.6 Accomplish the requirements of 2.42 for copper cable terminations to include: hardwire hookup (connection/junction boxes, equipment, power panels, transformers, switches, sensors & SWBDs), connector manufacture and testing of all new and modified electrical installations, using 2.1, 2.2 and 2.427 through 2.76 for guidance. Ensure all special notes are complied with. Reference 2.70 provides a detailed list of the prefabricated copper and fiber optic cable assemblies that will be provided as GFM. These prefabricated connectors will be installed on both local (intra space) and foreign (inter space) run cables. The contractor shall not include the cost to manufacture these connectors in their estimate.

3.4.6.1 Bond and ground equipment IAW 2.50 and 2.51.

3.4.6.2 Electrical installations shall be IAW 2.47.

3.4.6.3 Electrical equipment up to 75 LBS shall be installed by the NAVSSES AIT IAW 2.48.

3.4.7 Install new label plates IAW 2.42 and 2.52. The NAVSSES AIT shall assist the MSR in identifying the equipment and installation of the Label Plates.

3.4.8 All work within the C–DR boxes detailed in 2.42, including disconnecting existing wires/cables and making new electrical hook–ups shall be accomplished by the NSWCD AIT electricians. The NAVSSES AIT shall include the cost of these efforts in their estimate.

3.4.9 The Prime Contractor MSR will accomplish all cable removal, installation, rerouting, banding (Except for the last two bands at the equipment, which will be installed by the NAVSSES AIT), labeling and packing transit windows to support the electrical/cableway modifications detailed in 2.42. The NAVSSES AIT shall not include the cost of these efforts in their estimate.

3.4.10 The Prime Contractor MSR will accomplish all structural work and welding required to support the electrical/cableway modifications detailed in 2.42 that will include but not be limited to: installation of MCTs, collars, stuffing tubes, and cableway support brackets. The NAVSSES AIT shall not include the cost of these efforts in their estimate.

3.4.11 The Prime Contractor MSR will accomplish all structural, welding, mechanical, piping, painting, heavy metal abatement, insulation, rigging, to support the installation/modifications detailed in 2.42. The NAVSSES AIT shall not include the cost of these efforts in their estimate.

3.5 SCD 77427 "Digital Indicators" Requirements are as follows:

3.5.1 Accomplish the requirements of 2.43 and 2.44 for copper cable terminations to include: hardwire hookup (connection/junction boxes, equipment, power panels, transformers, switches, sensors & SWBDs), connector manufacture and testing of all new and modified electrical installations, using 2.1, 2.2 and 2.47 through 2.75 for guidance. Ensure all special notes are complied with. Reference 2.70 provides a detailed list of the prefabricated copper and fiber optic cable assemblies that will be provided as GFM. These prefabricated connectors will be installed on both local (intra space) and foreign (inter space) run cables. The contractor shall not include the cost to manufacture these connectors in their estimate.

3.5.1.1 Electrical equipment up 75 pounds shall be installed IAW 2.48.

3.5.1.2 Bond and ground equipment IAW 2.50 and 2.51.

3.5.1.3 Electrical installation shall be IAW 2.47.

(V)(G) "OPERATIONAL TEST"

3.6.3 Accomplish the requirements of Operational test for Toggle Switches IAW Test Note T2 of 2.43.

(V)(G) "SYSTEM OPERATIONAL TEST"

3.6.4 Accomplish the requirements of SOVT IAW Test Note T3 of 2.43. The Prime Contractor MSR will accomplish this test. The NAVSSES AIT shall not include the cost of this effort in their estimate.

(V)(G) "OPERATIONAL TEST"

3.6.5 Accomplish the requirements of Circuit Breakers IAW Test Note T4 of 2.43.

3.6.6 Install new label plates IAW 2.43 and 2.52. The NAVSSES AIT shall assist the MSR in identifying the equipment and installation of the Label Plates.

3.6.7 All work within the C–DR boxes detailed in 2.43, including disconnecting existing wires/cables and making new electrical hook–ups shall be accomplished by the NSWCD AIT electricians. The NAVSSES AIT shall include the cost of these efforts in their estimate.

3.6.8 The Prime Contractor MSR will accomplish all cable removal, installation, rerouting, banding (Except for the last two bands at the equipment, which will be installed by the NAVSSES AIT), labeling and packing transit windows to support the electrical/cableway modifications detailed in 2.423. The NAVSSES AIT shall not include the cost of these efforts in their estimate.

3.6.9 The Prime Contractor MSR will accomplish all structural work and welding required to support the electrical/cableway modifications detailed in 2.423 that will include but not be limited to: installation of MCTs, collars, stuffing tubes, and cableway support brackets. The NAVSSES AIT shall not include the cost of these efforts in their estimate.

3.6.10 The Prime Contractor MSR will accomplish all structural, welding, mechanical, piping, painting, heavy metal abatement, insulation, rigging, to support the installation/modifications detailed in 2.43. The NAVSSES AIT shall not include the cost of these efforts in their estimate.

3.7 SCD 77829 "RADAR and TDR TLIS for DFM, JP-5 and Potable Water" Requirements are as follows:

3.7.1 Accomplish the requirements of 2.45 and 2.46 for copper cable terminations to include: hardwire hookup (connection/junction boxes, equipment, power panels, transformers, switches, sensors & SWBDs), connector manufacture and testing of all new and modified electrical installations, using 2.1, 2.2 and 2.47 through 2.76 for guidance. Ensure all special notes are complied with. Reference 2.70 provides a detailed list of the prefabricated copper and fiber optic cable assemblies that will be provided as GFM. These prefabricated connectors will be installed on both local (intra space) and foreign (inter space) run cables. The contractor shall not include the cost to manufacture these connectors in their estimate.

3.7.1.1 Electrical equipment up 75 pounds shall be installed IAW 2.48.

3.7.1.2 Bond and ground equipment IAW 2.50 and 2.51.

3.7.1.3 Electrical installation shall be IAW 2.47.

3.7.2 Install new label plates IAW 2.45 and 2.52. The NAVSSES AIT shall assist the MSR in identifying the equipment and installation of the Label Plates.

3.7.3 All work within the C–DR boxes detailed in 2.42.45, including disconnecting existing wires/cables and making new electrical hook–ups shall be accomplished by the NAVSSES AIT electricians. The NAVSSES AIT shall include the cost of these efforts in their estimate.

3.7.4 The Prime Contractor MSR will accomplish all cable removal, installation, rerouting, banding (Except for the last two bands at the equipment, which will be installed by the NAVSSES AIT), labeling and packing transit windows to support the electrical/cableway modifications detailed in 2.45. The NAVSSES AIT shall not include the cost of these efforts in their estimate.

3.7.5 The Prime Contractor MSR will accomplish all structural work and welding required to support the electrical/cableway modifications detailed in 2.45 that

will include but not be limited to: installation of MCTs, collars, stuffing tubes, and cableway support brackets. The NAVSSES AIT shall not include the cost of these efforts in their estimate.

3.7.6 The Prime Contractor MSR will accomplish all structural, welding, mechanical, piping, painting, heavy metal abatement, insulation, rigging, to support the installation/modifications detailed in 2.45. The NAVSSES AIT shall not include the cost of these efforts in their estimate.

3.8 Post-Installation Test Support

3.8.1 Provide the services of an experienced AIT test and groom team needed to support ISEA-led test procedures, resolve SPIRs, and resolve test discrepancies as designated by the NAVSSES On-Site Test Coordinator. The AIT test and groom team shall support test procedures directly related to the alterations included in this statement of work: SCD 73088, SCD 71726, SCD 71604, 77829, 70403, 76253 and SCD 77427. The AIT test and groom team shall also provide adequate personnel to support the Fuel Control System, Potable Water System, and Ventilation ISEA. This effort may be in direct support of non-core alterations but is necessary due to the critical impact those alterations have on core alteration testing and milestones.

3.9 **Damage Control System Groom**

3.9.1 The NAVSSES AIT shall provide support services for the accomplishment of a Damage Control System (DCS) groom. The NAVSSES AIT shall investigate all DC alarms and faults within the Damage Control System. Repairs to include replacing blown fuses, correcting wiring issues, cleaning dirty ION sensors, replacing bad end of line resistors. Also the NAVSSES AIT shall identify any bad cards or channels. DC legacy items may also include AFFF, Halon, flood sensors, fire sensors, smoke sensors, fire doors, fire main valves, intrusion alarms, and evac stations. These support requirements are vital in order to verify functionality between DDGM BF core alteration HMI and legacy DC systems.

3.10 **General requirements for all SCDs are as follows:**

3.10.1 As required by 009-60 of 2.1 the NAVSSES AIT shall provide a detailed installation schedule (MS Project POA&M) that supports the availability milestones and the equipment turnover dates detailed in 2.69 two weeks after award of contract **(CDRL A001)**.

3.10.2 Using NAVSEA FY 15 Standard Item 009-004 and Refs 2.71 & 2.72, the NAVSSES AIT shall develop a QA Workbook to be maintained and updated on-site. This Workbook shall be used to keep an in-process record of Quality Control Inspections and be provided to NAVSSES for review, two weeks after receipt of award. A completed copy of the QA Workbook shall be provided to NAVSSES Personnel within two weeks after completion of availability. **(CDRL A002)** The QA Workbook shall be formatted as follows:

Sect. 1 Alteration Description
Sect. 2 Personnel Qualifications and Certifications
Sect. 3 Procedures Objective Quality Evidence (OQE)
Sect. 4 Installation POA&M
Sect. 5 Ship Installation Drawing (SID) List
Sect. 6 Test and Inspection (T&I) Plan – This plan should identify areas requiring In-Process inspections by annotating steps as Inspection (I), Verification (V), or Government (G) Points. This plan shall also incorporate all testing requirements.
Sect. 7 Test & Inspection Records

3.10.3 The NAVSSES AIT shall provide bi-weekly financial status report to the SME/TPOC no later than five business days after the end of the reporting period **(CDRL A003)**.

3.10.4 The NAVSSES AIT shall attend all production meetings and provide weekly physical progress report detailing the installation status to SME/TPOC no later than close of business on the last day of the reporting period **(CDRL A004)**.

3.10.5 The NAVSSES AIT shall initiate a Microsoft Access/Excel DDG-56 Cable Tracking Database utilizing References 2.3 through 2.11. This data base shall be used to support provisioning of all hook-up sheets, wire markers and tracking of cable/coax/copper connections and testing progress. Font used for these wire markers shall be typed, no hand written wire markers are acceptable. All wire markers shall be provided on-site prior to start of work. This database shall be capable of compiling connection and test information into a connection/test report. This report shall include percentage of cables verified, continuity tested, insulation resistance tested, cut into equipment, connection completed, electrician completing hook-up and electrician completing continuity test.

3.10.5.1This connection/testing report shall be posted on each piece of equipment (i.e. RSC, DIU, UCC etc.). During hook-up and testing, the electrician shall update this report to reflect progress of work accomplished on a daily basis.

3.10.5.2The contractor shall provide on-site support that includes: a means to update this database and printout any corrected wire markers as changes become necessary.

3.10.5.3The contractor shall submit written/typed report to the Hull Manager, OSTR, NSA and Planning Yard (OSTR) any changes required to this database within 24 hours from the time the change is identified.

3.10.5.4This database shall be delivered to the Ship Manager Representative (SMR), OSTR and SME/TPOC seven working days prior to start of installation, twice a week during core alteration installation and test meeting and upon end of sea trials. The completed version of this database shall be provided to the Ship Manager Representative (SMR), OSTR and SME/TPOC **(CDRL A005)**.

3.10.6 The NAVSSES AIT shall provide at least 18 communication devices with charging capabilities and additional batteries; these devices will allow the test teams and supporting personnel the ability to communicate throughout the ship. After the completion of the installation the NAVSSES AIT shall test operate and maintain all communication devices and their associated pieces of equipment. At this time all devices and components shall be fully functional and operational for future use. The NAVSSES AIT shall be responsible for replacement of any lost communication devices. The NAVSSES AIT shall be responsible for repair of any damaged communication device.

3.10.7 The contractor shall procure filter material and incidental material for all newly installed DDGM BF equipment intake louvers to protect from the industrial environment. The contractor shall secure filter material to the intake louvers using temporary adhesive such as duct tape. Once the equipment with installed filter material has been powered the contractor shall remove the old filter material and replace with new material on a weekly basis. If debris has penetrated the unit the contractor shall provide thorough cleaning of the equipment's internals. If ESD straps are required to clean the equipment internals then the contractor shall procure them as incidental material. Also, the contractor shall accomplish a thorough cleaning of all equipment after the industrial period has ended.

4.0 NOTES:

4.1 NAVSEA FY15 Standard Items (All CAT I Invoked) and SRF-JRMC FY15 Local Standard Items apply.

4.2 All production work for the installations listed in section 1.1 of this statement of work shall be coordinated, accomplished and completed to meet the scheduled dates listed in reference 2.69. Turnover of this equipment shall include its associated ancillary equipment (power panels, terminal boxes, etc.) and associated signal/fiber/power cabling.

4.3 For cables that have connectors, one end of all copper cables will be prefabricated with the connector installed onto it prior to shipment as GFM. These prefabricated connectors will be installed on both local (intra space) and foreign (inter space) run cables.

4.4 NAVSSES ISEA will conduct all post installation equipment light-offs and equipment testing and will provide all onsite training to the crew.

4.5 The NSA, SRF-JRMC will maintain Oversight Authority for the execution of the prime contractor MSR's contract i.e. Quality Assurance, Design Configuration, Schedule Adherence, Technical Oversight, Process Control Procedure Approval and Testing. NAVSSES will process and adjudicate Condition Reports (CR) related to this NAVSSES AIT delivery order.

5.0 DELIVERABLES/SCHEDULE:

5.1 Detailed Installation Milestone Schedule (POA&M) shall be submitted by the NAVSSES AIT as per NAVSEA Standard Item 009-060 and refs 2.71 and 2.72, fourteen (14) days after award of contract. The POA&M shall be revised on-site weekly and a copy provided to NAVSSES personnel. Updates shall be submitted daily to NAVSSES personnel tracking progress. (Para 3.10.1, **CDRL A001**)

5.2 A Quality Assurance (QA) Work Book shall be assembled by the NAVSSES AIT as per NAVSEA Standard Item 009-004 and refs 2.71 and 2.72, and maintained on-site. This QA book shall be delivered to NAVSSES-SSES with thirty (30) working days prior to start of availability for review and two (2) weeks after completion of availability (Para 3.10.2, **CDRL A002**).

5.3 A Bi-Weekly Financial Status Report shall be assembled by the NAVSSES AIT and submitted to the SME/TPOC no later than five business days after the end of the reporting period (Para 3.10.3, **CDRL A003**).

5.4 A Weekly Physical Progress Report shall be assembled by the NAVSSES AIT and submitted to the SME/TPOC no later than close of business the last day of the reporting period (Para 3.10.4, **CDRL A004**).

5.5 A Microsoft Access/Excel DDG-56 Cable Tracking Database shall be assembled by the NAVSSES AIT and submitted to the SMR, SME/TPOC and OSTR seven working days prior to start of installation, twice a week during core alteration installation and test meeting and upon end of sea trials (Para 3.10.5, **CDRL A005**).

5.6 Provide one (1) set of red-lined drawings reflecting final installation configuration to the ship at conclusion of install and two (2) sets to NAVSSES within two weeks of installation completion. (**CDRL A006**)

6.0 GOVERNMENT FURNISHED MATERIAL (GFM):

6.1 LLTM:

None

6.2 PUSH MATERIAL:

None

6.3 KITTED MATERIAL:

Total QTY PROVIDED	NAME OF PART	PIECE NO.	REF NO.	NATIONAL STOCK NO.	PARA NO.
One KT	Kitted Material for Shipalt 71604K	None	2.73	None	3.1
One KT	Kitted Material for Shipalt 73088K	None	2.73	None	3.1
One KT	Kitted Material for Shipalt 71726K	None	2.73	None	3.1
One KT	Kitted Material for Shipalt 70403K	None	2.73	None	3.1
One KT	Kitted Material for Shipalt 76253K	None	2.73	None	3.1
One KT	Kitted Material for Shipalt 77427K	None	2.73	None	3.1
One KT	Kitted Material for Shipalt 77829K	None	2.73	None	3.1

7.0 GOVERNMENT FURNISHED INFORMATION (GFI):

7.1 Planning Yard / NAVSSES will provide references 2.3 through 2.46, 2.54 through 2.56 and 2.60 through 2.75.

8.0 CLASSIFIED MATERIAL:

8.1 None

9.0 PERIOD OR PERFORMANCE:

9.1 From delivery order award to September 30, 2016.

10.0 PLACES OF PERFORMANCE:

10.1 The place of performance will be the contractor facility and Ships Repair Facility – Japan Regional Maintenance Center (SRF-JRMC), Yokosuka, Japan.

11.0 OVERTIME:

11.1 Overtime is requested for the duration of this award as required in order to complete the installations within the period of the ship's availability.

12.0 TRAVEL:

12.1 Norfolk, VA. – Yokosuka, Japan and return
People 30
Days 90
Trips 3

13.0 CONTRACTING OFFICER'S REPRESENTATIVE (COR):

13.1 The COR for this contract is (b) (6) NAVSSES C(b) (6) (215(b) (6) (b) (6)(b) (6)

14.0 SUBJECT MATTER EXPERT:

14.1 The SME/TPOC for this Delivery Order i(b) (6)n L(b) (6) NAVSSES C(b) (6)(b) (6) (215(b) (6) (b) (6)) (6) 3. The alternate SME/TPOC is (b) (6)(b) (6) NAVSSES C(b) (6)(b) (6) (215(b) (6) (b) (6) (6)

Task # 2 - USS MITSCHER (DDG-57) and USS MILIUS (DDG-69)
AEGIS Combat System Mod (A-Mod) C-DR Connection Boxes

15.0 Background

15.1 Naval Surface Warfare Center, Philadelphia Code 917 requires support services for the Management, Inspection, Installation and Repair of Interior Communication Equipment – Data Transfer System (C-DR) Connection Boxes and the field side termination of boxes aboard USS MITSCHER (DDG-57) in Norfolk, VA. and the USS MILIUS (DDG-69) in San Diego, CA.

16.0 **Scope**

16.1 Provide support services for the removal and installation of all cable, disconnect and reconnect of electrical cable with the inspection, report and repair of C-DR Connection Boxes aboard DDG-57 and DDG-69 in support of the Government On-Site Navy Technical Representative (NTR) identified in paragraph 11.1 of the SOW.

16.1.1 Location of Work: Various Locations throughout the ship

16.2 Identification of C-DR Boxes:

16.2.1 Quantity (Approximately 40 EA), C-DR Connection Boxes

17.0 **REFERENCES:**

17.1 NAVSEA Standard Items (FY15), can be obtained from
http://www.supship.navy.mil/ssrac4/standard.htm

17.2 NASEA STANDARD ITEM 009-22 (Shipboard Electrical Cable Test)

17.3 MIL-STD-2003A, Electric Plant Installation Standard Methods for Surface Ships and Submarines

17.4 SE000-00-EIM-110, Navy Installation and Maintenance Book (NIMB) Installation Standards

17.5 MIL-STD-1310, Shipboard Bonding, Grounding and Other Techniques for Surface Ships and Submarines

17.6 NAVSSES Instruction 4720.2F, "Process and Policy for Shipyard Industrial Work

17.7 Technical Spec TS9090-310(series) "Alterations to be Accomplished by Alteration Installation teams (AIT)"

17.8 NAVSEA SL720-AA-MAN-030 Surface Ship & Carrier Entitled Process for Modernization

17.9 NAVSEA S9AAO-AB-GOS-010/GSO, General Specification for Overhaul of Surface Navy Ships

17.10 C-DR Box Cable Install & Connection Responsibility Matrix Spreadsheet

17.11 SHIPALT DDG51-82635K, 439-8591352A, CKT 3TV Sys COTS Upgrade Cnsld Elec Dwg & ML

17.12 SHIPALT DDG5l-76829K, 451-8591338A, AN/SPA-25H Indicator Group Installation Cnsld Elec Dwg & ML

17.13 SHIPALT DDG51 77615K, 412-8591418A, OA Computing CSER 2 Multi-S/A Electrical Arrangement

17.14 SHIPALT DDG51 77615K, 412-8591419A, OA Computing CSER 3 Multi-S/A Electrical Arrangement

17.15 SHIPALT DDG51 77615K, 412-8591421A, OA Computing Misc. Electrical Arrangement

17.16 SHIPALT DDG51 77615K, 412-8591420B, OA Computing Electrical Block & ML (See Sheet 78 for additional Test Notes)

17.17 SHIPALT DDG51 77615K, 412-8591422B, OA Computing Wiring Connection List

17.18 SHIPALT DDG51-78511K, 411-8591435B, ACB12/TI12 Dspl Upgr Multi-S/A CIC Elec Eqpt Arr

17.19 SHIPALT DDG51-78511K, 411-8591436A, ACB12/TI12 Dspl Upgr Multi-S/A CSER 1 Elec Eqpt Arr

17.20 SHIPALT DDG51-78511K, 411-8591434B, ACB12/TI12 Dspl Upgr Misc Compt Elec Eqpt Arr

17.21 SHIPALT DDG51-78511K, 411-8591432B, ACB12/TI12 Dspl Upgr Elec Block Wrg Diag & ML (See Sheets 71 & 72 for additional Test and Special Notes)

17.22 SHIPALT DDG51-78511K, 411-8659696A, ACB12/TI12 Dspl Upgr Elec Wire Connection List

17.23 SHIPALT DDG-51-01000K, 320-8591426A, AMOD IDD-Electrical Power, Cnsld Elec Dwg & ML

17.24 SHIPALT DDG-51-01002K, 320-8591394A, AMOD IDD Electronic Cooling Water Cnsld Elec Dwg & ML

17.25 SHIPALT DDG-51-01002K, 320-8591395A, AMOD IDD Electronic Cooling Water Wire Connection List

17.26 SHIPALT DDG-51-01003K, 321-8591454A, AMOD IDD Cable Routing & ML

17.27 SHIPALT DDG-51-01003K, 321-8591455A, AMOD IDD Cable Routing, MN Cableway Checkpoint Location

17.28 SHIPALT DDG-51-74012K, 320-8591359A, Fwd BMD VLS Vent Upgrade Cnsld Elec Dwg & ML

17.29 SHIPALT DDG-51-76869K, 433-8591372A, 1MC Announcing Sys Upgrade Cnsld Elec Dwg & ML

17.30 SHIPALT DDG-51-76869K, 433-8591373A, 1MC Announcing Sys Upgrade List of Connections

17.31 SHIPALT DDG-51-77052K, 432-8591377A, IVCS Upgrade Cnsld Elec Dwg & ML

17.32 SHIPALT DDG-51-77052K, 433-8591372A, IVCS Upgrade List of Connections

17.33 SHIPALT DDG-51-79256K, 415-8591343A, AN/USG-2B Instl Consolidated Elec Mods & ML

17.34 SHIPALT DDG-51-79256K, 415-8591344A, AN/USG-2B Elec Wire Connection List

17.35 SHIPALT DDG-51-79975K, 410-8476535A, BFTT Build 4.1 – Multi-S/A Wire Connection List

17.36 SHIPALT DDG-51-79975K, 410-8476534A, BFTT Build 4.1 – Multi-S/A Cnsld Elec MWD Install & ML

18.0 REQUIREMENTS:

18.1 Provide one C-DR Box Team manager to integrate and coordinate all modifications, removals, installations, inspections and repairs for all C-DR connection boxes throughout the Ship for the duration of this availability IAW references 17.1 through 17.**36** and as directed by the Government Onsite NTR.

18.1.1 C-DR Box Team will accomplish all required wiring removals, modifications and installations within the C-DR boxes and field side, IAW 17.2, 17.3, 17.4 and 17.5.

18.1.2 All obsolete cable penetrations on both the C-DR connection boxes and field side will be blanked with a watertight fitting by the C-DR Box Team.

18.1.3 Inspect C-DR connection boxes for defective, damaged, or missing components including terminal boards, barrel nuts, fasteners and terminal board screws. Inspect for proper bonding and grounding IAW 17.4. Conduct repairs as directed by Government Onsite NTR.

18.1.4 All existing or remaining cables are to be inspected and tested to identify any unwanted grounds. Clear grounds as directed by Government Onsite NTR.

18.1.4.1 Submit one legible copy, in hard copy or electronic media, of a report listing the results of the requirements of 18.1.3 and 18.1.4, including repair recommendations and material requirements to the Government Onsite NTR.

18.1.5 Accomplish repair of C-DR connection boxes and clearing of unwanted grounds as directed by the Government Onsite NTR IAW the report submitted in paragraph 18.1.4.1.

18.1.6 C-DR Box Team member will record circuit numbers of existing cables, including power source cables and power jumpers between terminal boards within each C-DR connection box, as tagged at C-DR connection boxes and record any cables entering boxes, and wiring within the boxes that are not clearly identified IAW the requirements of reference 17.9

18.1.6.1 Submit one legible copy, in hard copy or electric media, of a report listing the results of the requirements of 18.1.6 to the Government ISEA via the Supervisor.

18.1.6.2 The Government Onsite NTR and Planning Yard Representative will research and properly identify all cables and internal wiring that are missing tags and wire markers and provide this data to the Team manager.

18.1.7 C-DR Box Team will install new cable tags and wire markers in place of those found to be missing or defective using the identification data provided by the Government Onsite NTR.

18.1.8 The C-DR Box Team shall estimate a Level of Effort of 80 man-days of electronics technician labor and $10,000 in material to procure required material to support the repairs and modification to the C-DR connection boxes identified and authorized in paragraphs 18.1.5 and 18.1.7.

18.2 The C-DR Box Team will be responsible for the field side of all cables that terminate in the C-DR connection boxes and will be responsible for the following:

18.2.1 Testing/ring-out of newly installed, modified and/or re-routed cables IAW Navy Standard Item 009-22 (Ref 17.2).

18.2.2 Properly identify and tag new cables and provide accurate hookup data to the Government Onsite NTR.

18.2.3 Identify any existing unused or dead-ended cables terminated within the C-DR connection boxes that will require removal from the C-DR connection boxes. The SHIPALT installing activity (MSR or separate AIT) shall remove the cables from the wire ways to their point of origin after leaving the C-DR connection boxes as directed by the SUPERVISOR and as required by their Work Item. Provide data, including SHIPALT number, circuit number and cable type, to the C-DR Box Team manager explaining the reason for removal.

18.3 The C-DR Box Team shall provide qualified electronics technicians to participate in the electrical wiring continuity and megger checks for all cables terminated in the C-DR connection boxes. The C-DR Box Team shall provide qualified electronics technicians to assist installing activities with troubleshooting as directed by the Government Onsite NTR. The C-DR Box Team shall estimate a Level of Effort of 80 man-days to accomplish continuity, megger checks and troubleshooting IAW 17.2.

18.4 Appropriate Government and Planning Yard representatives will assist the Team as required for the duration of this availability.

18.5 Repairs/modifications shall be completed and C-DR connection boxes energized in time to meet installation schedule milestones detailed in references 17.9 and 17.10.

18.6 The C-DR Box Team shall initiate a Microsoft Access/Excel DDG-65 Cable Tracking Database utilizing References sections 17.12 through 17.40. This data base shall be used to support provisioning all hook-up sheets, wire markers and tracking of cable/coax/copper connections and testing progress. Font used for these wire markers shall be typed, no hand written wire markers are acceptable. All wire markers shall be provided on-site prior to start of work. This database shall be capable of compiling connection and test information into a connection test report. This report shall include percentage of cables verified, continuity tested, insulation resistance tested, cut into equipment, connection completed, electrician completing hook-up and electrician completing continuity test. This connection/testing report shall be posted on each C-DR connection box. During hook-up and testing, the electrician shall update this report to reflect progress of work accomplished on a daily basis. The contractor shall provide on-site support. The on-site support shall include a means to update this database and printout any corrected wire markers as changes become necessary. The contractor shall submit written typed report to the Government Onsite NTR and Planning Yard Onsite Technical Representative (OSTR) any changes required to this database within 24 hours from the time the change is identified. This database shall be delivered to the Government Onsite NTR seven working days prior to start of installation and upon end of sea trials. The completed version of this database shall be provided to the Government Onsite NTR.

18.7 Dress in and terminate all cabling into C-DR connection boxes directly related to installation of SHIPALTS identified in reference 17.12 through 17.36. For SHIPALT or alteration cables terminating in the C-DR connection boxes not identified in references 17.12 through 17.36, the C-DR Box Team will connect the end terminating in the C-DR connection box and the field side. The C-DR Box Team shall estimate a Level of Effort of 80 man-days to accomplish these additional cable connections. Dressing shall include providing and packing all entry devices in all C-DR connection boxes and field side. Dressing shall also include isolation of spare conductors and shields using clear heat shrink in order to reduce grounds found during testing (This requirement is needed at both the C-DR connection box side and connector to help strengthen the plastic sheathing and prevent each pair or triad shield from coming in contact with ship's ground). The contractor (MSR or separate AIT) shall remove all dead ended or cut cables associated with C-DR connection boxes and field side.

18.7.1 For all C-DR connection boxes, 1/4" clear heat shrink is required to be installed over the length of each pair or triad of any cable that enters the connection box (commonly called the service loop) prior to crimping lugs at the end. This procedure will reduce the risk of the individual shields for each pair or triad coming in contact with ground.

18.8 The C-DR Box Team shall support Post Installation Aegis Light-Off and Combat Systems Testing. This effort will require two Electronic Technicians remaining onsite for eight weeks after Aegis Light-Off working ten hour days Monday through Friday and eight hour days on Saturday. This support shall include assisting in troubleshooting electrical circuits and signals, and disconnecting and reconnecting wires in the C-DR connection boxes as directed by the Government Onsite NTR.

18.9 Prior to start of installation, the contractor shall develop a Quality Assurance (QA) Plan and workbook that outlines their Installation Process Control Procedures (IPCPs), which specify the critical elements and requirements of Ref 17.1, 17.6 and 17.7. The QA Plan shall contain as a minimum: (1) Copies of approved SCD / MWOs, (2) Personnel Qualifications and certifications for all personnel that will be onboard during the installation, (3) copy of contractor's QA System approved by SUPSHIP or NAVSEA 04XQ, (4) Installation POA&M providing breakdown of AIT work being accomplished in a sequence of events, and provides time requirements. (5) list of approved drawings for each upgrade. (6) Test and Inspection Plan / Records – this plan should identify areas requiring in-process checks for Inspection (I), Verification (V), or Government (G) Points. Procedures containing a signature block, that will be signed by a contractor representative to ensure that the Navy Standard Items have been followed, (g) Test & Inspection Records and (7) Test and Inspection Records containing Test and Inspection performed in section (6) and Installation Completion Report IAW Ref 17.1, 17.6 and 17.7.

18.10 The contractor shall provide one (1) set of redlined drawings to the ship and two (2) sets of red lined drawings to NAVSSES OSIC/SEA-21 PMR at the completion of the availability.

18.11 The contractor shall maintain a Condition Reports tracking Matrix from the beginning of the availability to the end of the availability to NAVSSES. This matrix will show a listing of all submitted condition report with a brief description of the report and any cost associated with the condition report. Condition reports will be adjudicated on a case by case basis before work can be started.

18.12 The contractor shall maintain identity of all items of material issued to ship using a DD form 1149. Contractor shall provide two (2) copies of DD-1149 forms to NAVSSES.

18.13 The contractor at no time shall exceed neither the delivery order funded level (if incrementally funded) nor the awarded delivery order ceiling. The contractor must provide a 75% Completion Letter in advance of estimated point to NAVSSES Contracts Specialist (c/02), Subject Matter Expert (SME) and Contracting Officer Representative (COR – c/917). The 75% Completion Letter shall also include expected funding to complete.

19.0 Deliverables / Schedule:

19.1 Detailed Installation Milestone Schedule (POA&M) shall be submitted by the NAVSSES AIT as per NAVSEA Standard Item 009-060 and refs 17.71 and 17.72, fourteen (14) days after award of contract. The POA&M shall be revised on-site weekly and a copy provided to NAVSSES personnel. Updates shall be submitted daily to NAVSSES personnel tracking progress. (**CDRL A001**)

19.2 A Quality Assurance (QA) Work Book shall be assembled by the NAVSSES AIT as per NAVSEA Standard Item 009-004 and refs 17.71 and17.72, and maintained on-site. This QA book shall be delivered to NAVSSES with thirty (30) working days prior to start of availability for review and two (2) weeks after completion of availability (Para 18.9, **CDRL A002**).

19.1 A Bi-Weekly Financial Status Report shall be assembled by the NAVSSES AIT and submitted to the SME/TPOC no later than five business days after the end of the reporting period (**CDRL A003**).

19.2 A Weekly Physical Progress Report shall be assembled by the NAVSSES AIT and submitted to the SME/TPOC no later than close of business the last day of the reporting period. (**CDRL A004**).

19.3 A Microsoft Access/Excel C-DR Cable Tracking Database shall be assembled by the NAVSSES AIT and submitted to the SMR, SME/TPOC and OSIC seven working days prior to start of installation, once a week during AMOD avail installation, during system testing and upon end of sea trials (Para 18.6 **CDRL A005**).

19.4 Provide one (1) set of red-lined drawings reflecting final installation configuration to the ship at conclusion of install and two (2) sets to NAVSSES within two weeks of installation completion. (Para 18.10 **CDRL A006**)

20.0 SCHEDULE

6.1 The installation preparation will commence immediately upon delivery order award. Installation schedule will be determined by the schedules of the DDG-57 and DDG-69.

21.0 Government Furnished Information & Assets:

21.1 Drawings will be provided to the contractor by separate correspondence.

21.2 Changes and/or additions of Test Procedures, Ship Installation Drawing, LARs or Installation Standards (i.e. Standard Items) will be provided by Government as soon as available. Changes / additions / standards incorporated after date of award that impact cost will be subject to an equitable adjustment.

21.3 NAVSSES manager will provide ship installation schedule when confirmed.

21.4 Kitted material to accomplish the requirements of SHIPALTs per reference 17.35.

21.5 The following assets and services are to be provided by the government via Shipyard Support Spec:

21.5.1 Services for loading and unloading of AIT material, supplies and equipment from ship (Crane / Operator, Riggers, Fork Lift, Transportation)

21.5.2 Temporary supply and exhaust ventilation installed and maintained to affected spaces.

21.5.3 Temporary 110 Volt, 60 HZ electrical power installed and maintained to affected spaces.

21.5.4 Laydown area in close proximity to ship for placement of connex and/or tool boxes.

21.5.5 Disposal, transportation and handling of hazardous waste, lead, heavy metals, asbestos and PCBs.

21.5.6 All hot work, associated support services for hot work (supervision, direction, fitter, fire watch, interference removal/restoration, etc.) and all materials required for the accomplishment of hot work.

21.5.7 Rig and crane.

21.5.8 Painting and lagging.

21.5.9 Staging.

21.5.10 Connex Box with lighting and shelves.

22.0 Contractor Furnished Material:

22.1 The contractor shall procure all material required to support the repairs and modification to the C-DR connection boxes identified in paragraphs 18.1.5 and 18.1.7.

23.0 TRAVEL

23.1 Norfolk, VA. - San Diego, CA. and return

People	5
Days	24
Trips	1

24.0 Classified Material:

24.1 None

25.0 PERIOD OF Performance

25.1 From delivery award until September 30, 2016

26.0 PLACES OF PERFORMANCE

26.1 It is anticipated that the places of performance will be San Diego, CA. and Norfolk, VA.

27.0 OVERTIME

27.1 Overtime is requested for the duration of these availability as required in order to complete the installations within the period of the ship's availability.

28.0 Contracting Officer's Representative (COR)

28.1 The COR for this contract is (b) (6) NAVSSES C(b) (6) (215(b) (6) (b) (6)(b) (6)

29.0 Subject Matter Expert:

29.1 The SME for this installation is (b) (6) n I(b) (6) NAVSSES C(b) (6)(b) (6) (215(b) (6) 3. The alternate SME is (b) (6)(b) (6) NAVSSES Code (b) (6) (215(b) (6)

Task # 3 – Scalable Integrated Bridge System (S-IBS), Voyage Management Software (VMS) and Emergency Navigation Laptop (ENL)

30.0 BACKGROUND

30.1 Naval Surface Warfare Center, Carderock Division (NAVSSES) Sustainment and Modernization Code 917, in support of the US Navy's Sustainment and Modernization initiatives, requires support for the installation of Scalable Integrated Bridge System (Scalable IBS), Emergency Navigation Laptop (ENL) and associated VMS Software Upgrade Support covering SCD 79320, SWD 79641, SCD 15215 aboard USS COMSTOCK (LSD-45) and ENL Installation/Groom services aboard LSD, CG, and

DDG class ECDIS-N ships.

31.0 SCOPE

31.1 Provide integration, installation, engineering, testing, technical support services, oversight/material support, shipboard modifications, and concurrent/conjunctive HVAC modifications for Scalable IBS system aboard USS COMSTOCK (LSD-45), and technical support services for Scalable IBS/ENL system grooms on applicable ships as needed in support of the NAVSSES Code 917. The planned locations for services are Norfolk, VA; San Diego, CA; Little Creek, VA; Yokosuka, Japan; Pearl Harbor, HI; Mayport, FL; Everett, WA; Rota, Spain and Myanmar, Bahrain.

31.2 The contractor shall accomplish the complete Scalable IBS installation IAW NAVSEA Standard Items and all referenced applicable documentation.

31.3 The contractor shall provide technical support during the ship checks, installation, integration and test phases. The contractor shall assist in the resolution of the Scalable IBS discrepancies as they may occur or are identified during the availability.

32.0 APPLICABLE DOCUMENTS

32.1 MIL-STD-2042A (SH) Fiber Optic Topology Installation Standard Methods for Naval Ships (Equipment/Connectors and Inter-connectors).
32.2 NAVSEA S9AA0-AB-GS0-010/GS0, General Specifications for Overhaul of Surface Navy Ship.
32.3 MIL-STD-454, Standard General Requirements for Electronic Equipment.
32.4 MIL-STD-1310 (Navy) Bonding and Grounding.
32.5 OPNAV Instruction 5100.23B, Navy Occupational Safety and Health (NAVOSH) Program Manual.
32.6 Standards and Interpretations, Occupational Safety and Health Chapter 1915.14, 1915.15 and 1915.16.
32.7 NAVSEA SL720-AA-MAN-030 Navy Modernization Program (NMP) Management and Operations Manual "One Book"
32.8 NAVSEA 9090-310G Industrial Alterations Accomplished by AITs
32.9 NAVSSES Installation 4720.2F Process and Policy for Shipboard Industrial Work
32.10 MIL-STD-24749, Electrical Grounding, General Specifications
32.11 MIL-DTL-22520G, General Specification for Crimping Tools and Wire Termination.
32.12 NAVSEA 0967-LP-000-0110 Electronics Installation and Maintenance Book, Installation Standards
32.13 Government Furnished Material Listing (RFQ Timeline)
32.14 MIL-STD-248, Welding and Brazing Procedures and Performance Qualification.
32.15 MIL-STD-0022, Welded Joint Design
32.16 NAVSEA S9086-VH-STM-000/CH/635, Thermal Insulation.
32.17 NAVSEA S9086-VD-STM-000/CH-631, for painting.
32.18 NAVSEA 0901-LP-480-002/CD-9480, for piping systems.
32.19 NAVSEA SL720-AA-MAN-020 FMP Management and Operations Manual

32.20 NAVSEA FY15 Standard Items http://www.supship.navy.mil/ssrac4/standard.htm
32.21 ANSI/ASQC Q9002-1994, Quality System, Model for Quality Assurance in production Installation, and servicing.
32.22 NAVSSES Code 917 Quality Assurance (QA) Manual
32.23 321-8505803 POWER SYSTEMS MODIFICATIONS ECDIS-N
32.24 401-8473813 MOD PILOT HOUSE ARRANGEMENT INCID AECS-SCS & AECS-MCS INSTALLATION
32.25 437-8475004 ECDIS-N INSTALLATION WIRE TABLES
32.26 437-8473680 REMOVALS INCIDENTAL TO ECDIS-N
32.27 401-8473814 AECS-SCS SYSTEM MOD CHART ROOM ARR INCID AECS INSTL
32.28 167-8473730 DOOR MODIFICATIONS ECDIS-N CIPHER LOCK
32.29 184-8506610 ECDIS-N FOUNDATION INSTALLATION
32.30 401-8473815 MOD CIC ARR INCID AECS & PWR MID-LIFE UPG INSTALLATIONS
32.31 ECDIS-N IC CKT 5IN BLOCK WIRING DIAGRAM – INSTALLATION

33.0 REQUIREMENTS

33.1 In support of the Scalable IBS Installation, the contractor shall participate in ship checks and review all referenced installation drawings in order to gain a complete understanding of installation, pre-fabrication requirements and quantity and type of cables and terminal connections required. The contractor should be aware that the specifics of the installation may change based on walk-thru and/or drawing review. The government will provide drawings to account for the differences, as it gets closer to the time of installation.

33.2 Using NAVSEA Standard Items (ref 32.20) and refs 32.8 & 32.9, the contractor shall develop a QA Workbook to be maintained, and updated on-site. This Workbook shall be used to keep an in-process record of Quality Control Inspections and be provided to NAVSSES for review, thirty (30) days prior to start of installation. A completed copy of the QA Workbook shall be provided to NAVSSES 917 personnel within two weeks after completion of installation. The QA Workbook shall be accessible/viewable to NAVSSES onsite personnel during the entire availability and formatted as follows:

Sect. 1 Alteration Description
Sect. 2 Personnel Qualifications and Certifications
Sect. 3 QA System Letter and Company procedures
Sect. 4 Installation POA&M
Sect. 5 Ship Installation Drawing (SID) List
Sect. 6 Work Package/Test and Inspection Plan/Records – This plan should identify areas requiring In-Process inspections by annotating steps as (I), (V), or (G) Points. This plan shall also incorporate all testing requirements.
Sect.7 Test and Inspection Records
Sect.8 Alteration Completion Report

33.3 Utilizing all applicable documentation, the contractor shall develop a Microsoft Access database to support provisioning of all hook-up sheets, wire markers and tracking of

installation progress. The contractor shall provide on-site, the means to update this database and print out any corrected wire markers as changes become necessary. The contractor shall report to NAVSSES OSIC any changes required to this database. The electronic database is to be delivered to NAVSSES within 2 weeks after installation. This database shall include but not be limited to the following:

a. Existing Equipment Removed Date
b. Existing Equipment Foundation Removed Date
c. Existing Equipment Relocated Date.
d. New Foundations Installed Date
e. New Foundations Painted Date
f. Equipment Installed Date
g. Percentage of Cabling Installed to each piece of Equipment.
h. Percentage of Cabling Connected to each piece of Equipment
i. Percentage of Continuity Test Completed to each piece of Equipment
j. Date Power Up completed to each piece of equipment.
k. Test Procedure Start Date
l. Test Procedure, percentage completed
m. Test Procedure Completion Date.
n. Date Equipment arrived on site.

33.4 The contractor shall prepare, and maintain daily, a detailed installation milestone schedule (POA&M) based on the ship's availability. The contractor shall update this POA&M as schedules change, workflow problems occur, or other conditions warrant. The details of this POA&M will be coordinated with Ship's Force, NAVSSES OSIC representative, and other activities as necessary to ensure that proper support is available and interference or delays are minimized.

33.5 The contractor shall order, stage, and store all contractors' miscellaneous installation material.

33.6 Utilizing installation drawings, the contractor shall develop a material list detailing all material required to complete the installation and connectorization of Scalable IBS.

33.7 The contractor shall provide storage for Government Furnished Material (GFM), including installation check out spares, as determined by the Government and provided for in the applicable installation documentation. The contractor shall also provide for the transportation of material between the contractor's storage facility and ship. The contractor shall maintain identity of all items of material associated with the ship using DD form 1149s. The contractor shall maintain and update a database detailing status of material. This status will include material nomenclature, part number, quantity, location, installed date and person issued to.

33.8 The contractor shall provide the necessary facilities, equipment, tools and trained trade personnel to support installation and testing of all the Scalable IBS installed systems and interface equipment. In accomplishing this work, the contractor shall:

33.8.1 Provide the services of one (1) senior installation technician for a ship check approximately 30 days prior to installation on each ship for the purpose of identifying cable runs and pre-fabrication requirements and generating red line drawings on the applicable installation drawings.

33.8.2 Maintain a daily work schedule and coordinate all work with Ship's Force, RMCs and NAVSSES representatives.

33.8.3 Ensure work scheduled and accomplished meets requirements of POA&M discussed in paragraph 33.4. All POA&M discrepancies and updates shall be coordinated and discussed with NAVSSES on-site representative on a daily basis.

33.8.4 Obtain, stage and ship to work site all contractor furnished incidental material necessary for each stage of the installation.

33.8.5 Ensure all trade personnel meet applicable NAVSEA technical skill requirements as well as the qualification requirements of the contract

33.8.6 Where applicable, the contractor shall provide technical support during the installation, integration and test phase to assist in the resolution of Scalable IBS enabling technologies discrepancies as they may occur or are identified during the availability. A core group of three (3) personnel experienced in the S-IBS operation shall be made available, as required, during the installation.

33.8.7 Ensure compliance with all applicable safety regulations.

33.8.8 Conform to shipboard routine with regard to cleanliness, personnel conduct, and ship's security and integrity.

33.8.9 Perform a validation check of all cables to confirm cable origin and destinations. This validation check shall consist of a continuity test for copper cables and light test for fiber cables. Fiber cables shall also be tested prior to the installation to ensure that no breaks in continuity exist.

33.8.10 Perform a continuity test for all copper wiring to ensure leads have been terminated at proper connections.

33.8.11 Where applicable, test and checkout all Fiber Optic cables for Optical Time Domain Response.

33.8.12 Where applicable, test and checkout all ST/SC Connectors and cables with Power Meter for dB-loss.

33.8.13 Where applicable, test and checkout any other disturbed or restored systems.

33.8.14 Integrate all the components into the local area networks.

33.8.15 Where applicable, test and check out functionality of all installed measuring devices.

33.8.16 The contractor shall terminate all signal and command copper wiring on cabling installed in Scalable IBS equipment with crimped ferrule type connectors.

33.8.17 The contractor shall attend all on-site daily meetings between MSR, RMC, Ship's Force and NAVSSES.

33.8.18 The contractor shall install, dress in and terminate all cabling into all Scalable IBS equipment and any associated auxiliary equipment or connection boxes

33.8.19 The contractor shall provide the services of one (1) senior engineering technician. He/she shall be responsible for testing and troubleshooting during the SEA TRIAL underway period, if applicable.

33.8.20 If required, the contractor shall provide the services of one (1) senior engineering technician. He/she shall be responsible for correcting problems as they arise after SEA TRIAL and up to the ships deployment.

33.9 Submit the following reports upon completion of the installation and hardware:

33.9.1 An Installation Completion Report upon completion of the installation. This report will include the following as applicable: pre- and post-installation test results, updates and/or changes to ILS and hardware requirements, recommendations, dates and names of personnel making ILS entries, OPNAV Form 4790/CK entries and general data such as ship name, location, date(s) and points of contact for ILS delivery aboard the ship. All identified impacted ILS changes will be provided to ship prior to departure as per ref 3.8.

33.9.2 Weekly financial and technical progress reports shall be provided on all tasks with the funding and task completion percentages. All identified disconnects between work completion and money spent will be addressed.

34.0 DELIVERABLES/SCHEDULE

34.1 Detailed Installation Milestone Schedule (POA&M) shall be submitted by the NAVSSES AIT as per NAVSEA Standard Item 009-060 and refs 32.71 and 32.72, Fourteen (14) days after award of contract. The POA&M shall be revised on-site weekly and a copy provided to NAVSSES personnel. Updates shall be submitted daily to NAVSSES personnel tracking progress. (Para 3.10.14, **CDRL A001**)

34.2 A Quality Assurance (QA) Work Book shall be assembled by the NAVSSES AIT as per NAVSEA Standard Item 009-004 and refs 32.71 and 32.72, and maintained on-site. This QA book shall be delivered to NAVSSES with thirty (30) working days prior to start of availability for review and two (2) weeks after completion of availability (Para 3.10.2, **CDRL A002**).

34.3 A Bi-Weekly Financial Status Report shall be assembled by the NAVSSES AIT and submitted to the SME/TPOC no later than five business days after the end of the reporting period (**CDRL A003**).

34.4 A Weekly Physical Progress Report shall be assembled by the NAVSSES AIT and submitted to the SME/TPOC no later than close of business the last day of the reporting period (**CDRL A004**).

34.5 Provide one (1) set of red-lined drawings reflecting final installation configuration to the ship at conclusion of install and two (2) sets to NAVSSES within two weeks of installation completion. (**CDRL A006**)

35.0 SCHEDULE

35.1 The installation preparation will commence immediately upon Delivery Order award. Installation schedule will be determined by the schedule of the LSD-45.

36.0 GOVERNMENT FURNISHED INFORMATION/MATERIAL

36.1 NAVSSES will provide available LSD-45 drawings and associated documentation.

36.2 NAVSSES will provide all GFM.

37.0 CONTRACTOR FURNISHED MATERIAL

37.1 The contractor shall provide all miscellaneous and incidental installation material unless otherwise specified. See material list.

38.0 TRAVEL

38.1 Installation – Norfolk, VA to San Diego, CA:

People	12
Days	21
Trip(s)	1

38.2 Installation – Norfolk, VA to Little Creek, VA:

People	1
Days	14
Trip(s)	2

38.3 Installation – Norfolk, VA to San Diego, CA:

People	1

Days 14
Trip(s) 2

38.4 Installation – Norfolk, VA to Yokosuka, Japan:
People 1
Days 14
Trip(s) 2

38.5 Installation – Norfolk, VA to Pearl Harbor, HI:
People 1
Days 14
Trip(s) 2

38.6 Installation – Norfolk, VA to Mayport, FL:
People 1
Days 14
Trip(s) 2

38.7 Installation – Norfolk, VA to Myanmar, Bahrain:
People 1
Days 14
Trip(s) 2

38.8 Installation – Norfolk, VA to Everett, WA:
People 1
Days 14
Trip(s) 2

38.9 Installation – Norfolk, VA to Rota, Spain:
People 1
Days 14
Trip(s) 2

This Statement of Work is for Scalable Integrated Bridge installations on one (1) ship, and technical support services, materials support and shipboard modifications as needed.

39.0 CLASSIFIED MATERIAL

39.1 None.

40.0 PERIOD OF PERFORMANCE

40.1 From Delivery Order award date to 30 September 2016.

41.0 PLACES OF PERFORMANCE

41.1 It is anticipated that the place of performance shall be:

Little Creek, VA; Norfolk, VA; San Diego, CA; Mayport, FL; Pearl Harbor, HI; Everett, WA; Rota, Spain; Yokosuka, Japan and Myanmar, Bahrain

42.0 OVERTIME

42.1 Overtime is requested for the installation team in order to complete the installation within the periods of availability of the ship.

43.0 CONTRACTING OFFICER'S REPRESENTATIVE (COR)

43.1 The COR for this Delivery Order is [redacted]

44.0 SUBJECT MANAGEMENT EXPERT (SME)

44.1 The SME for this Delivery Order is [redacted]

Task # 4 – CG47 Class HM&E Integrated Ship Control System – Groom and Assessments

45.0 BACKGROUND

45.1 Naval Surface Warfare Center, Ship Systems Engineering Station (NAVSSES) Code 917, in support of the US Navy's Integrated Ships Control (ISC) and Condition Based Maintenance (CBM) Modernization Programs requires support services for the accomplishment of troubleshooting, modification, repair, removal, installation and testing to the ISC Core alteration systems installed on (1) CG-47 class ship. The ISC and interfacing systems on CG class ships will require assessments, grooms, modification or troubleshooting to: Local Area Network (LAN), Machinery Control System (MCS), Damage Control System (DCS), Gas Turbine Engines, Gas Turbine Generators, Uninterruptable Power System (UPS), Fuel Oil Service Systems (FOSS), Hydra Communication System, Integrated Bridge Systems (IBS), Engine Control Units (ECUs), Date Acquisition Units (DAUs), Data Inter Face Units (DIUs), Potable Water Systems, Tank Level Indicators (TLI), Digital Fuel Systems and Controls, Fire Main Systems, Sea Water Service Systems, Motors, Motor Controllers, Motor and Hydraulic Operated Valves, and Electrical Distribution Systems and all Legacy System wiring Interfaces.

46.0 SCOPE

46.1 Provide integration, repair, replacement, removal, installation, engineering testing and technical support services for the troubleshooting, assessment, repairs and testing on (1) CG-47 class ship in support of NAVSSES Code 917 Philadelphia PA. The planned location for the installation support services is Pearl Harbor HI.

46.2 Based on the shipcheck and assessment of the various systems as tasked, the contractor shall accomplish any modifications to the CG- ISC and CBM Mod installations in accordance with NAVSEA Standard Items and all applicable documentation and installation drawings. The contractor shall request all needed installation drawings prior to the start of each installation.

46.3 The contractor shall provide technical support during the assessment, removal, repair, installation, integration and test phase to assist in the identification and resolution of the ISC and HM&E Core Alt Modernization Technologies discrepancies during the ships availabilities.

47.0 APPLICABLE DOCUMENTS

47.1 MIL-STD-2042C (SH) Fiber Optic Topology Installation Standard Methods for Naval Ships (Equipment/Connectors and Inter-connectors).
47.2 NAVSEA S9AA0-AB-GS0-010/GS0, General Specifications for Overhaul of Surface Navy Ship.
47.3 MIL-STD-454, Standard General Requirements for Electronic Equipment.
47.4 MIL-STD-1310 (Navy) Bonding and Grounding.
47.5 OPNAV Instruction 5100.23B, Navy Occupational Safety and Health (NAVOSH) Program Manual.
47.6 Standards and Interpretations, Occupational Safety and Health Chapter 1915.14, 1915.15 and 1915.16.
47.7 NAVSEA SL720-AA-MAN-030 FMP Management and Operations Manual
47.8 NAVSEA 9090-310F SHIPALT by Alteration Installation Team
47.9 NAVSSES Installation 4720.2F Process and Policy for Shipboard Industrial Work
47.10 NAVSEA Standard Item 009-22 (Shipboard Electrical Cable Test)
47.11 MIL-STD-24749, Electrical Grounding, General Specifications
47.12 MIL-DTL-22520G, General Specification for Crimping Tools and Wire Termination.
47.13 NAVSEA 0967-LP-000-0110 Electronics Installation and Maintenance Book, Installation Standards
47.14 NAVSEA STANDARD ITEMS FY-14
47.15 ANSI/ASQC Q9002-1994, Quality System, Model for Quality Assurance in

production Installation, and servicing.

47.16 NAVSSES Code 917 Quality Assurance (QA) Manual
47.17 MRC 99-A5N2 Inspect Integrated Ships Control System
47.18 MRC 99-A5N3 Test Integrated Ships Control System
47.19 DOD-STD-2003 Electrical Plant Installation Standard Methods for Surface Ships
47.20 TP 4B664C017 String Communication
47.21 TP 4B664C006 Fire and Smoke Sensors
47.22 TP 4B521C001 Fire Main

48.0 REQUIREMENTS

48.1 In support of the ISC and CMP installations, the contractor shall review all technical documentation in order to gain a complete understanding of the equipment removals, repairs, installation, modifications, testing and quantity and type of cables and terminal connections required. The contractor shall accomplish the requirements of Ref 47.17 Maintenance Requirement Card 99-A5N2 (Inspect Integrated Ships Controls) and ship availability schedules. The Contractor shall provide the services of seven (7) skilled technicians to visit fifteen (15) ships for two weeks in order to clear all obvious DC alarms and faults, inspect and repair/replace up to 25 bad sensors. The contractor shall check for all bad LAN primary and secondary connections, test functionality of all UPS equipment and repair or replace any broken or loose connections. Investigate all fault indications, make minor repairs, replace blown fuses, broken connections and identify any bad cards within the DAU's , ECU's, IBS, MCS , DCS station and an on all ISC screens.

48.1.1 The contractor shall investigate all DC alarms and faults within the Damage Control System IAW Ref 47.20, 47.21 and 47.22. Repairs to include replacing blown fuses, correcting wiring issues, cleaning dirty ION sensors, replacing bad end of line resistors and replacing up to 25 bad sensors per visit. Also the contractor shall identify and report any bad cards or channels.

48.1.2 The contractor shall accomplish the functionality testing of all faulty indications on all fire main valve position indicators, hydraulic valve position indicators, and check all fire pump reverse rotation indications. Repairs to include correction of any broken or loose connections.

48.1.3 The contractor shall check the functionality and operation of all Fuel Oil Fill and Transfer valves manually, locally and at ISC consoles.

48.1.4 The contractor shall investigate all fault indications on MCS screens and repair any broken connections, blown fuses and identify any bad cards and/or channels.

48.1.5 The contractor shall accomplish the requirements of Ref 47.1 thru 47.22 when supporting the 15 ships visits.

48.2 In support of the ISC and CMP installations, the contractor shall review all technical documentation in order to gain a complete understanding of the equipment removals, repairs, installation, modifications, testing and quantity and type of cables and terminal connections required. The contractor shall accomplish the requirements of Ref 47.18 Maintenance Requirement Card 99-A5N3 (Test Integrated Ships Controls) and ship availability schedules. The Contractor shall provide the services of ten (10) skilled technicians to visit fifteen (15) ships for three weeks in order to test the functionality of the Damage Control System. The contractor shall test all primary and secondary LAN fiber connections, repair and replace all bad connectors and cables and conduct a light test on all fiber cables, connectors and components. Also, perform functionality test of HYDRA Communication System to include an operational test of the UPS system on ISC HYDRA system.

48.2.1 The contractor shall investigate all DC alarms and faults within the Damage Control System. The repairs to include replacing blown fuses, correcting wiring issues, cleaning dirty ION sensors, replacing bad end of line resistors and replacing up to 50 bad sensors. Also the contractor shall identify any bad cards or channels.

48.2.2 The contractor shall test the functionality of all primary and secondary fiber connections on the LAN systems. The repairs to include polishing and replacement of bad connectors up to (50) connectors per hull and 500 ft. per hull of bad fiber cable for fifteen (15) installations.

48.2.3 The contractor shall accomplish the functionality and drop testing of all UPS components and system equipment. Repairs to include correction of any broken or loose cables or connections.

48.2.4 The contractor shall determine the amount of non functional and missing radios. This will include a coverage test of the HYDRA system to determine a cause for any dead spots. The contractor shall perform an operational test of the HYDRA UPS system.

48.3 The contractor shall order, stage, and store all contractors miscellaneous repair, installation and testing material.

48.4 The contractor shall prepare a detailed removal, repair, installation and testing

milestone schedule (POA&M) based on the ship's availability. The contractor will update this POA&M as schedules change, workflow problems occur, or other conditions warrant. The details of this POA&M will be coordinated with Ship's Force, SMR NSA, Port Engineer and NAVSSES OSIC representative, and other activities as necessary to ensure that proper support is available and interference or delays are minimized.

48.5 Utilizing existing ship drawings the contractor shall develop a material list detailing all fiber optic connectors, cabling and DC sensors required to complete the repair, modification, installation, connectorization and testing per Para. 48.1 and 48.2.

48.6 The contractor shall provide temporary storage for Government Furnished Material (GFM) as provided for in the applicable installation documentation. The contractor shall also provide for the transportation of material between the contractor's storage facility, NAVSSES storage facility and the ship. The contractor shall maintain identity of all items of material associated with the ship using DD form 1149s. The contractor shall maintain and update a database detailing status of material. This status will include material nomenclature, part number, quantity, location, installed date and person issued to.

48.7 The contractor shall provide the necessary facilities; equipment, tools and trained trade personnel with past ISC and DDG systems experience to support removals, repairs, installation and testing of all the ISC and CBM installed systems and legacy interface equipment. In accomplishing this work, the contractor shall:

48.7.1 Maintain a daily work schedule and coordinate all work with Ship's Force, NSAs, Port Engineers and NAVSSES SMR and OSIC representatives.

48.7.2 Ensure work scheduled and accomplished meets requirements of POA&M discussed in paragraph 48.4. All discrepancies will be coordinated and/or discussed with NAVSSES on-site representatives (SMR & OSIC).

48.7.3 Obtain, stage and ship to work site all contractor furnished material necessary for each stage of the installation.

48.7.4 Ensure all trade personnel meet applicable NAVSEA technical skill requirements as well as the qualification requirements of the contract

48.7.5 Ensure compliance with all applicable safety rules and regulations.

48.7.6 Conform to shipboard routine with regard to cleanliness, personnel

conduct, and ship's security and integrity.

48.7.7 Perform a validation check of all cables to confirm cable origin and destinations. This validation check shall consist of megger, continuity and wring out test for all copper cables IAW Ref 47.10 and light test for fiber cables.

48.7.8 Perform a continuity test for all copper wiring to ensure leads have been terminated at proper connections.

48.7.9 Where applicable test and checkout all Fiber Optic cables for Optical Time Domain Response.

48.7.10 Where applicable test and checkout all ST/SC Connectors and cables with Power Meter for dB-loss IAW Ref 47.1.

48.7.11 Where applicable test and checkout any other disturbed or restored systems.

48.7.12 Integrate all the components into the Damage Control System, Machinery Control System, Uninterrupted Power System, Local Area Network System, Fuel Control System, Damage Control System, HYDRA, Integrated Bridge System and associated connection boxes and legacy equipment and systems.

48.7.13 Where applicable test and check out functionality of all installed measuring devices.

48.7.14 The contractor shall terminate and test all signal and command copper wiring on cabling installed in ISC and CBM equipment with crimped ferrule type connectors.

48.7.15 The contractor shall attend all on-site daily production meetings between SMR, NSA, RMC's, Ship's Force, Port Engineer and NAVSSES OSIC.

48.7.16 The contractor shall install, dress in and terminate all cabling into all ISC LAN, UPS, MCS, IBS, FCS, HYDRA and DCS equipment and any associated auxiliary equipment or connection boxes.

48.7.17 The contractor shall provide the services of one (1) senior engineering technician. He/she will be responsible for testing and troubleshooting during all LOA and SEA TRIAL underway period.

48.7.18 The contractor shall provide the services of one (1) senior engineering technician. He/she will be responsible for correcting problems as they arise during/after LOA and SEA TRIAL and up to the ships deployment.

48.8 Submit the following reports upon completion of the assessment, removals, installation and testing:

48.8.1 A Removal and Installation assessment Completion Report upon completion of the installation. This report will include the following as applicable: pre- and post-assessment test results, updates and/or changes to ILS and hardware requirements, recommendations, dates and names of personnel making ILS entries, CSMP data entry receipts and general data such as ship name, location, date(s) and points of contact for ILS delivery aboard the ship. All identified impacted ILS changes will be provided to ship prior to departure as per Reference 47.8.

48.8.2 Weekly financial and technical progress reports will be provided on all tasks with the funding and task completion percentages. All identified disconnects between work completion and money spent will be addressed.

49.0 DELIVERABLES/SCHEDULE

49.1 Detailed Removal, Installation and Repair/Testing Milestone Schedule (POA&M) will be submitted within twenty (20) working days after contract award. Updates will be submitted daily to NAVSSES representative tracking progress. Format shall track progress agreement/discrepancy and repairs with POA&M (Para 48.4 **CDRL 0001**).

49.2 Weekly financial and technical progress reports will be provided to the Installation Manager on all tasks with funding and task completion percentages. This report should detail number of foundations removed and equipment installed, equipment and cables connected, tested, and completion percentage versus time expired. All identified disconnects between work completion and money spent will be addressed. (Para 48. 8 **CDRL 0002**)

50.0 SCHEDULE

50.1 The installation preparation will commence immediately upon Delivery Order award. Installation schedule will be determined by the schedule of the CG-47 Class ISC Installation Manager, Platform Manager and PMRs/SMRs.

51.0 GOVERNMENT FURNISHED INFORMATION/MATERIAL

51.1 NAVSSES will provide available CG-47 Class drawings and associated SCD and MRC documentation as documentation becomes available.

52.0 CONTRACTOR FURNISHED MATERIAL

52.1 The contractor shall provide all material such as fiber connections, fiber cable, copper cable, DC Sensors and installation material needed to accomplish the successful removals, installation and testing for AP2, AP3 and INSURV support.

53.0 TRAVEL

53.1 Norfolk, VA – Pearl Harbor, HI and return

People	7
Days	14
Trip(s)	1

54.0 CLASSIFIED MATERIAL

54.1 None.

55.0 PERIOD OR PERFORMANCE

55.1 From Delivery Order award to 30 September 2016.

56.0 PLACES OF PERFORMANCE

56.1 It is anticipated that the places of performance will be: Pearl Harbor - (1) trip.

57.0 OVERTIME

57.1 Overtime is requested for the installation team in order to complete the installation within the periods of availability of the ship.

58.0 CONTRACTING OFFICER'S REPRESENTATIVE (COR)

58.1 The COR for this Delivery Order is (b) (6) NAVSSES C(b) (6)(b) (6), Philadelphia, PA (215(b) (6) (b)(b) (6)

59.0 SUBJECT MATTER EXPERT (SME)

59.1 The SME for this Delivery Order is [redacted] NAVSSES Code [redacted], Philadelphia, PA (215) [redacted].

Section E - Inspection and Acceptance

INSPECTION AND ACCEPTANCE TERMS

Inspection and Acceptance will be performed by the COR, (b) (6)(b) (6)(b) (6) Naval Surface Warfare Center, Carderock Division, Philadelphia, PA

Section F - Deliveries or Performance

DELIVERY INFORMATION

CLIN	DELIVERY DATE	QUANTITY	SHIP TO ADDRESS	UIC
0001	POP 13-MAR-2016 TO 30-SEP-2016	N/A	NAVAL SURFACE WARFARE CENTER CARDEROCK (b) (6)(b) (6)(b) (6) NAVAL BUSINESS CENTER 1601 LANGLEY AVE, BLDG 542 E PHILADELPHIA PA 19112-5051 215(b) (6)(b) (6)(b) (6) FOB: Destination	N65540
000101	N/A	N/A	N/A	N/A
000102	N/A	N/A	N/A	N/A
0004	POP 13-MAR-2015 TO 30-SEP-2016	N/A	NAVAL SURFACE WARFARE CENTER CARDEROCK (b) (6)(b) (6)(b) (6)(b) (6) NAVAL BUSINESS CENTER 1601 LANGLEY AVE, BLDG 542 E PHILADELPHIA PA 19112-5051 (b) (6)(b) (6) FOB: Destination	N65540
000401	N/A	N/A	N/A	N/A
000402	N/A	N/A	N/A	N/A

Section G - Contract Administration Data

ACCOUNTING AND APPROPRIATION DATA

AA: 1751810 A1GW 251 WS060 0 050120 2D 000000
COST CODE: A00002739592
AMOUNT: [redacted]
CIN 130047990000001: [redacted]
CIN 130047990000002: [redacted]

FOIA Exemption B4 Contractor Proprietary and Private

AB: 1751804 70BA 257 00070 R 045924 2D XN1124
COST CODE: 0007051124ND
AMOUNT: [redacted]
CIN 130048177300001: [redacted]
CIN 130048177300002: [redacted]

Section I - Contract Clauses

FOIA Exemption B4 Contractor Proprietary and Private

INCREMANTAL FUNDING

(a) This contract is incrementally funded and the amount available for payment hereunder is limited to [redacted] inclusive of fee. It is estimated that funds will cover the cost of performance through 30 April 2015. Subject to provisions of the clause FAR 52.232-22 – Limitation of Funds (APR 1984) in Section I of this contract, no legal liability on the part of the Government in excess of [redacted] shall arise unless additional funds are made available and incorporated as a modification of the contract.

Section J - List of Documents, Exhibits and Other Attachments

Attachment 1 for Delivery Order 0001- Contract Data Requirements List